JOINT ABSTRACT OF RECORD

(ARRANGED ACCORDING TO SUBJECTS OF PROOF)

No. 16 ORIGINAL

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1932

THE UNITED STATES OF AMERICA, PLAINTIFF

vs.

THE STATE OF OREGON, DEFENDANT

Testimony taken before

GARRET W. McENERNEY, ESQUIRE

Special Master

TOPICS D.5. (*j*) to Y

PAGES 631 to 1166

INDICES IN VOL. I

VOL. II

j. Comparison with the early days

WILL Y. KING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

At the time the Sand Reef broke through there was a great deal more water in that particular year than in recent years. (R. 314.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Mr. Smyth, how did the country look in 1872, when you saw it for the first time again, as compared to the way you saw it in 1853, when you first went through, to the best of your recollection?

A. Well, I couldn't give any comparison, because when I came in 1872, it was July; and when I came in 1853, it was in October. That is a different season of the year. And I came into the country in 1872 on the north side of the lake, and when I came into it in 1853 I came in on the south side, and you couldn't make a comparison, and I never got closer to the lake when I came in in 1872 than Wrights Point—that is as close as I got to the lake.

Q. In 1872?

A. 1872. But in 1853 we followed right around the lake and used that water for our stock.

Q. Where did the water come with reference (R. 479)——

A. I couldn't say as to that now.

Q. It was too far away?

A. Yes.

Q. You went through in October, 1853?

A. Yes.

Q. As I understood you, you had to cross the mouth of the Blitzen by floating the body of your wagon over?

A. We forded it, I told you. That is the reason I always had a remembrance of such a good amount of water in the lake, or it wouldn't have backed up.

Q. From your subsequent experience, as you have seen it all the years, you are satisfied that there was a lot of water in October, 1853, because you had to ford the river to get across?

A. Yes, sir. I think it was backed up pretty good.

Q. And you base that on your subsequent experience in all these years upon that lake?

A. Yes, sir. (R. 480.)

Mr. JAMES THOMAS BAKER, called as a witness for the plaintiff, testified in substance as follows:

We had three dry years, 1887, 1888, and 1889; Malheur Lake was dried up mostly during that time; comparing those years with this year, 1931, and last year, 1930, I do not think that Malheur Lake was quite as dry in 1887, 1888, and 1889 as it is in the seasons we are now having; I have never seen it as dry as it is now. (R. 578.)

Mrs. EFFIE L. DUNN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was a great deal more water in the early days than there has been the last fifteen years. (R. 865.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Now, you talked about sagebrush out in the east end there; just the stubs. You don't know whether those sagebrush were 100 or 150 years old, or how old they are, do you?

A. A person may draw their own conclusions about that. I imagine that they grew there a long time ago, and as the mineral condition of the water preserved them, they would stay there.

Q. Do you know that wood lasts indefinitely if covered with water?

A. Well, in certain kinds of minerals. (R. 1222.)

Q. What is the fact about the last 15 or 20 years, the condition of the last 15 or 20 years with reference to the rainfall and snowfall as compared with when you first went into the country?

A. Well, I think it has been dry although I have seen some dry seasons in this part of the country also.

Q. Isn't it a fact in 1922 the water was back to the (Neal) meander line around this lake?

A. Yes.

Q. And in some more years since 1920, hasn't it?

A. Well, I think—if I remember right, 1922 was about as (R. 1226) high a water year as I have seen down there in later years.

Q. What other years did you have fairly good water of recent years?

A. Well, we have always got high water until about three years ago, and there has always been water sufficient there to make a hay crop.

It may have been four years.

Mr. LILJEQVIST. Q. And to get a hay crop did you have to have your lands flooded, waters going over them?

A. Oh, yes; you have to have plenty of water to get any hay.

I believe up until the last three or four years our land has been flooded in order to get a crop, but the last water we got was all through the (Silvies) river. The Ruh brothers have a dam in the (Silvies) river, and when they put in the dam, it backs the water, and it flows on our place.

I am familiar with where the meander line is with reference to the Herman Ruh place, and I never saw the water anything like four

feet on that meander line, unless they (R. 1227) ran the meander across some little neck or little place.

Mr. Herman Ruh and Mr. Otley are both dead. A great number of persons have died within the last ten years that used to live around these lakes. Mr. Alexander McKenzie is dead, and also Mr. Foley. Albert Reinemann is dead. My brother owned a piece of land on the meander line, but I do not remember now when he died. I was never much acquainted with Mr. Reinemann. Martha Dunn died within the last ten years. (R. 1228.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The early days were wetter than it has been in recent years. (R. 1657.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

We have had more snow prior to the last ten years than we have had in the last ten years.

Mr. LILJEQVIST. Q. When did you quit having ordinary normal falls of snow in the valley as distinguished from the mountains?

A. I would say 10 or 12 years. When I was a boy, we had heavy snowfall in this valley. (R. 1718.)

Mr. ALVIN C. SPURLOCK, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. What was the fact about in earlier days as to the water in that lake: Did it come up farther than it has in recent years, ordinarily I mean?

A. Yes. (R. 1759.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

In the last few years, the water has not come up on my place at all; there has not been any water there much. It has been awfully dry. (R. 1841.)

Mr. JEFF CAWLFIELD, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

In the earlier days, I do not think that the water receded as far in the fall as it has done in recent years.

I should say that there has been a lot less snowfall and rainfall in the last twenty years. (R. 1902.)

Mr. W. SCOTT HALEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was more water in the early days than there has been in later years. (R. 1991.)

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

The (Malheur) lake did not get as dry in 1889 as it is at the present time. (R. 2019.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Was this entire lake ever dry within your knowledge prior to last year and this year?

A. Well, these are the driest years I have ever seen. I guess there has been dry years before, but I don't know about that. (R. 2123.)

Mr. WM. HENRY MCKENZIE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

To my knowledge the country has been getting drier; it has been getting drier for quite a while.

To my recollection there has been two kinds of freshets in this country, one the early freshet from the low hills and a later one from the high mountains. We have not been getting those freshets from the low hills in the last ten years. In the early days when I first knew the country we did not get those freshets regularly. There have been years when we got them. (R. 2160.)

Mr. THOMAS L. VICKERS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The climate has changed since I went in there (Malheur Lake); it has been getting drier since about 1917. (R. 2315.)

Mr. ALPHENA VENATOR, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was more snow on the mountains in the early days than there has been in the last 15 or 20 years. (R. 2330.)

GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

I do not remember but one time in hitting the banks out there at Windy Point in a boat since I have been in the country. That was the year I made that trip in the springtime. I landed at one place, and I had difficulty in getting out, and the wind was blowing in that direction too, and it raised the water. I think that was in 1922.

I could not say for sure that the water came back again as high as it was in 1922. I believe that was the highest year (R. 2516), but I am not positive about it. (R. 2517.)

k. Water elevations by Mott V. Dodge

MOTT V. DODGE, recalled as a witness for the defendant, testified in substance as follows:

At various times from 1910 I have made studies or examination of water levels in this community as an engineer, for Mr. McConnell principally, sometimes for other parties, we took elevations of the water surface of Malheur Lake, sometimes at the Narrows, sometimes at what we designated the north side of the lake, which was

from the bench (mark) at the Peterson place, which has already been mentioned, and in two instances on the east shore of the lake.

(Following is given from the record (pages 2475–2476), in tabulated form the date, place, and elevation of the water surface.)

Place	Date	Elevation of water surface, in feet
Narrows Bridge	December 28, 1910	4,093.04
*North side of lake	December 28, 1910	4,093.44
*North side of lake	March 8, 1912	4,093.36
**East end of lake	July 10, 1913	4,095.00
Narrows Bridge	July 14, 1913	4,094.60
Narrows	September 13, 1913	4,093.98
*North side of lake	February 7, 1914	4,094.60
*North side of lake	May 4, 1914	4,095.43
Narrows	April 15, 1915	4,093.90
Narrows	May 21, 1918	4,093.60

*Taken at the bench mark at the Peterson place.
**Taken at the easterly end of the lake, a little bit south of the base line as shown on Defendant's Exhibit X–6.

I determined those elevations accurately to the best of my ability. Those elevations are all on the datum, considering the bench mark at the Narrows 4,096.20.

Different parties were with me at different times when that check was made. Part of the time it was Mr. C. B. McConnell, part of the time it was Mr. R. D. Cooper, and different people at different times.

Mr. LILJEQVIST. Q. All right. Now, will you state whether or not those elevations were taken at places that were free from any possible question of the flowing waters of the Blitzen and Silvies affecting them? (R. 2476.)

A. Not absolutely; no.

There is a possibility of some effect, slight I believe, however, from the Silvies River at the station which we designate as the north side of Malheur Lake. That was, I should judge, a mile or more from the mouth of the Silvies River and should have represented the lake level very closely. At the same time we had reason, a time or two, to believe that when the flow of the Silvies River was large that there was some possible effect from it. I do not think at any time it would amount to more than one-tenth of a foot. (R. 2477.)

l. Water conditions in 1932

Mr. GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

With regard to the condition of the water coming into the (Malheur) lake at the present time, the river (Blitzen) at the present time was very low when I left there (April, 1932).

There was lots of water going into the lake from the Blitzen River—it came from the hills, between the high mountains and the low hills. It rained there for a couple of days during that period, and then the river got high and it run in. But those low hills, it went off without any rain, but in the immediate vicinity around Chalk Mountain and below the high mountains, that went off with the rain, and in that way the channel could not carry the water. It spread (R. 2530) all over that flat at Billy Dunn's.

Mr. LILJEQVIST. Q. Did it run over Springer's place?

A. Yes.

Q. The Marshal place and the Hill place?

A. Yes.

Q. Did the Blitzen River overflow all in the vicinity of the Spring Branch?

A. Yes. No dams, and naturally the channel could not carry the water.

Q. Can you state approximately the amount of lake bottom that now has water on it as compared with last fall when we tried the case?

A. I might give you a rough idea. There is water around in this tule area which is east of the mouth of the Blitzen, and north of the Neal meander line. It would be the top edge of it. It comes into these places right here (indicating on Plaintiff's Exhibit 3). The outer line of the water up to the present run-off extends easterly in the area north of the meander line and easterly of the Blitzen River, and then extends in a northeasterly direction some distance westerly of Cole Island, and northeasterly to a point a little west of Cole Island, a distance of approximately midway between the two towers of Cole Island shown on Plaintiff's Exhibit 3, thence northwesterly covering most of the grain field to Ausmus' Point, which point is just south of Cane Island, as described by me; thence southwesterly including half of the Big Grain Field, shown on the map (Plaintiff's Exhibit 3), and continuing southwesterly to a point approximately a mile east of Graves Peninsula; and thence southeasterly and southerly, and thence southwesterly to the south end of Graves Peninsula, and westerly of the Small Grain Field (R. 2531) in a general southeasterly direction toward the boat house. (R. 2532.)

Redirect examination:

Mr. LILJEQVIST. Q. From your observation since 1908, in your knowledge of the snowfall this winter, to what extent will that lake fill up. Will it (R. 2544) do it this year, or will it take another winter like this?

Mr. COLLINS. That's speculative—it is just a guess that he is making.

Mr. LILJEQVIST. Let's take it as a guess.

A. I would guess it would not fill up this year.

Q. Would it take another year like this to do it, in your judgment?

A. Yes; another year. It depends on how this summer goes by. If the summer takes all of this water away, it will take still a great snow—probably several years, but if we have a rainy season, we will have water all winter, and next year it would fill it up pretty easy.

Mr. COLLINS. It might take two or three years to fill it?

A. Yes.

Mr. LILJEQVIST. Q. Has any water been held up the Blitzen this year?

A. It has been held up all winter.

Q. This spring, the water that did come down that you referred to, was this water it could no longer hold?

A. Yes; they couldn't hold it any longer. (R. 2545.)

6. Vegetation

a. In the early days

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

The water on the Malheur Lake side of the Sand Reef was full of tules and marshy. (R. 202.)

Cross-examination:

Along the north edge or borders of Malheur Lake was a considerable area of tules which was dense; it was necessary to follow a cow trail to get into the lake; a channel was no better. (R. 207.)

The winter came on at the close of the dry period of the year, and the islands were dry and the tules were dry. In fact, that is what has happened to the tules, they have dried out and blown away. (R. 208.)

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

The best grass in the country was down near the lake. The cattle would drift in Malheur Lake as it froze up, and would go all through the country where there were tules and grass. There are a great many tules on the north side of Malheur Lake from Saddle Butte west. (R. 214.)

I never rode out into Malheur Lake getting cattle, but I could observe the tules from the shore and they appeared to go out quite a distance. There was six miles that was open water and it varied considerably as it went around the lake; some places probably a couple of miles. There were tule beds practically entirely around Malheur Lake, except on the east side at Windy Point there were no tules. (R. 215.)

There was quite a little hay on the south side of Malheur Lake but I have never cut, or engaged in cutting hay in the lake. (R. 223–224.)

Around the edge of Malheur Lake the salt grass grows. It does not grow in very much water.

I have seen salt grass up around Windy Point; also around Saddle Butte and in the vicinity of the road between those two points. There were no tules up around that road, but there was greasewood and sagebrush out from the lake bed, or between the lake and the road. The outside road (that runs from Saddle Butte to Windy Point) goes right through the sagebrush and the greasewood. (R. 224–225.)

Greasewood is found in what we call alkali soil; very poor soil; sagebrush grows in a better soil. I think the greasewood stands the most water, but neither stands very much; they die out if much water stands on them. (R. 225.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

The tules were all over Malheur Lake, everywhere, except in the deep water. It would be about three or four feet of water and mud. We found tules in practically all parts of Malheur Lake, excepting in the open water. Everywhere there were tules and channels and sometimes we would get lost. (R. 270.)

There are quite a few tules around the mouth of the Blitzen and they have been there ever since I have been familiar with Malheur Lake. There has been lots of them there; quite a lot of them there. (R. 280.)

Cross-examination:

The tules grow eight feet, maybe more. When there was ice there, they would be sticking out of the ice. I could not say just how many feet, but if you tried to walk through them, it would be pretty hard to get through. I guess they were six feet, maybe more in height. (R. 296.)

Mr. WILL Y. KING, called as a witness for the plaintiff, testified in substance as follows:

In 1879 on the way to Happy Valley (R. 300) there were no tules along the east bank of Malheur Lake; just salt grass right on to the lake. There might have been tules farther out, about half a mile or such a matter. (R. 302.)

We used to brand cattle twice a year, the spring and the fall. The first ride I made was in the fall of 1879 to gather cattle. I continued to ride for nine years and in that year I went down on the south side of Malheur Lake. (R. 303.) At that time there would be a patch of tules and then a patch of open water there. The cattle did not go into the water. We rode on the outside of the lake at that time of the year. We never rode in there after them. I could not tell how far the tules extended into the lake on the side of Malheur Lake. We could see tules there but we would pay

no attention as to how far they went along there; they appeared to be scattered as far as you could see reasonably.

Malheur Lake looked like a swamp. (R. 304.) Some years later I was around the north side of Malheur Lake. You could see open water occasionally and you could see a good many tules. (R. 305.)

In 1879 and at least twice and sometimes oftener every year for nine years thereafter I saw sagebrush and greasewood all the way between Windy Point and the margin of Malheur Lake, and right along the high road there. It extended out toward the lake in the neighborhood of half a mile; very near out to the body of the lake. Some people call yellow sage black sage, and there may have been some of the yellow sage and some of the water sage. I do not remember, but more than likely there was some of both. The yellow sage has a heavier stock to it than has the water sage, and I saw some of those stocks down there. (R. 379–380.)

Cross-examination:

I do not know what black sage is, but some people call yellow sage black sage. (R. 380–381.)

Mr. Darius Hynson Smyth, called as a witness for the plaintiff, testified in substance as follows:

In the nineties, I took my stock down into Malheur Lake and got located down there.

Mr. Blackmar. Q. Well, as compared with 1874, when you commenced taking your stock in there, were there more or fewer tules?

A. I couldn't say as to that; that is something I couldn't say. That question couldn't be answered. I don't know that. I don't know whether there was more or less. Some places there would be more, and some less.

In connection with my work with the stock, I have had occasion to go into the tules and drive them out. I was down there looking after the stock on the lake every winter and summer from about 1891, until right lately. (R. 459.) I have a good house down there right in the lake bed.

(Mr. Pecore. The house is situated about an inch on the map (Plaintiff's Exhibit No. 3) northeast of the figure 3 in lot 3, section 28, T. 26 S., R. 31 east, south of the lake.)

My son had cattle down there this winter. In that section of the lake it was all tules to a great extent, except the island ridges (R. 460), which had all different kinds of wild grasses and sweet grasses growing on them (R. 461).

I have cut hay down on Malheur Lake and had it cut for close to forty years; every year but this year, which is the only time I have ever failed.

I own some land on the Neal meander line, or what I was told was that line. I do not know anything about it as far as knowledge is concerned, because I never run it.

Mr. BLACKMAR. Q. The hay you have cut over a period of forty years, has that been on that meander line? (R. 466.)

A. On that meander line and some outside of it. On my deeded lands. (R. 466–467.)

Cross-examination:

From the earliest time that I have seen Malheur Lake, the majority of the tules grew in the west end. The lake runs east and west and it was in the west end. I can not say whether there were any openings through the tules there in those days.

Mr. LILJEQVIST. Q. You did not drive stock out there in the wintertime?

A. Oh, I rode everywhere, but I couldn't say how it was. I don't remember now. (R. 486.)

Q. What I am trying to get at, to your memory, it was a solid bunch of tules; or was there a lot of water in between the tules?

A. It was both.

There are some channels in the lake; nothing noticeable. (R. 487.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

Before the Sand Reef broke through, my work with the cattle took me most of the winter, every winter, into Malheur Lake. (R. 501.) At that time, the western half of Malheur Lake was all tules. It looked more like a swamp than a lake. (R. 502.)

In the early days they could not get in there because there was too much water. They would go in there in the winters when it would freeze up, to either take the cattle in or get them out, and then I would see these tules in the west half of Malheur Lake. That was the condition prior to the time the Sand Reef broke through, and also the condition after. (R. 503.)

The tules would be on both sides of those sloughs where I have seen other fellows break through the ice in Malheur Lake. (R. 503–504.)

Cross-examination:

Mr. LILJEQVIST. Q. And southerly from Pelican Island—I mean westerly, off towards the Narrows, that was all open water, too, wasn't it?

A. Yes, sir; there was some tules in places, but mostly all open.

Q. It was mostly open down until you got to about the line where the Silvies and the Blitzen (Rivers) ran into the lake?

A. I don't know just exactly where the Silvies runs (R. 524) into the lake.

Q. Where the Blitzen runs into the lake then?

A. Yes; and beyond that.

Q. And beyond that?

A. Yes.

Q. The open water extended somewhere westerly along the line where the Blitzen entered the lake, is that correct?

A. I have seen it away beyond there. There are a lot of tules over there by Dunn's.

Q. When you got on a hill, and looked out, you saw a lot of open water?

A. Yes. (R. 525.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, testified in substance as follows:

In December, 1872, when I rode from the mouth of the Silvies River straight across Malheur Lake on the ice to the Sodhouse Spring, I did not see many tules in there, only around the outside; they were right at the mouth of the Silvies River. The slough ran back from that and there were tules there, but when I got into the center of the lake, I could not see much of the tules away off on either side at that time. (R. 539.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, in this western part of the lake from the Blitzen and the Silvies Rivers, west toward the Narrows, what they call islands, what were they, just tule patches?

A. Well, I wasn't much acquainted with that country. I never rode in there much. I rode this other way. It looked to me like a swamp and tules, yes.

I do not remember seeing any land in there with greasewood or sagebrush on it. (R. 545.)

Mr. LILJEQVIST. Q. Did you ever in those days in the southeasterly part of the lake, or in the southerly part of the lake on the ice part of it see any lands that had any sagebrush or greasewood on it out in that lake?

A. No.

Q. Did you see any extensive body of tules there, or just describe it in your own way?

A. Yes, there were tules around the lake, nearly all the way around. (R. 546.)

Mr. GEORGE E. WHITING, called as a witness for the plaintiff, testified in substance as follows:

There are a great many tules at the mouth of the Silvies River; it would be hard to say how far they extended into the lake but quite a considerable distance from this (north) side; I suppose you would call it extending out into the (Malheur) lake; I could not state how far they went in in feet or in miles, but it was some distance; that was about the only times we went there that winter, and with a blizzard it looked all alike. We had especially bad weather for about six weeks; we kept pretty busy on the lake at that time. (R. 552.)

Mr. JAMES THOMAS BAKER, called as a witness for the plaintiff, testified in substance as follows:

I found the most tules in the west part of Malheur Lake; the west half of that lake is pretty much tules; through those tules are to be found openings and sloughs wherever there is water; the tules do not form a solid bank. (R. 576.)

The tules in Malheur Lake were high enough to give cattle protection from the cold; that was the reason for putting them (the cattle) in there during the winter. (R. 579.)

Mr. EMIL BAKER, called as a witness for the plaintiff, testified in substance as follows:

I commenced to ride for the Harden & Riley Ranch, now called the OO Ranch, when I was twelve years old, about 1892 or 1893. (R. 589.) During my work with the cattle, I used to cross Malheur Lake from the Red "S" Field following the course that led me about a mile east of the Howell oil well (R. 590), down to within a mile of Alva Springer's place on the south side of Malheur Lake.

There are a good many tules in that part of Malheur Lake, and from my line of travel, there were tules to the east and to the west of me there. (R. 591.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, testified in substance as follows:

In that particular part of the western end of Malheur Lake, near the Alva Springer place, on the south side of Malheur Lake, and around to the north side of Malheur Lake near the Howell oil well, where I was hunting (R. 611–612), I saw lots of tules there, and there was some islands, and some open water; some channels apparently, and some sloughs. After I got into the lake there that we have been referring to there were tules pretty much on all sides of us. This hunting trip that I made was about fifteen years ago (about 1916). (R. 612–613.)

Prior to that time it was a good long time since I rode for stock in that country. I was out of the stock business.

When I rode for stock in there I was down toward the Lawen country. There were tules down there also, and they seemingly extended out quite a ways into Malheur Lake. They were big tules and were pretty high. In the fall of the year after the snow is on them, they fall over. (R. 613.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, that area in there (in the west half of Malheur Lake) was a lot of tules, and a lot of open water, wasn't it, both kinds?

A. Yes, sir.

Q. It made a great hunting region?

A. Yes, sir, it did. (R. 617.)

Mrs. OLLIE DARSEY, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. In the early days when you were down there with your father around Malheur Lake, there were a good many tules all throughout the lake, were there not?

A. Yes, sir.

Q. And have you been in that part of the lake which is down toward the west end where there are a good many tules in there?

A. No, I haven't been so far down in there. I have been where some of those islands were, but I don't know which ones, or what they call them.

Q. But around those islands in the west part there are a good many tules in there?

A. Yes, sir; there is a good many tules in there.

Q. Of considerable size?

A. Yes, sir. They are pretty tall; they are as high as a person's head on a horse; and some places you can look over and some you can't; or it used to be that way. Of course, I haven't been down there for several years.

Q. And, of course, among these tules there were some places where there would be a small amount of open water? (R. 656.)

A. Yes, sir.

Q. You do not believe this story of one of these witnesses about chopping fence posts for Pete French down there, do you?

A. No, I don't think so.

Cross-examination:

Mr. LILJEQVIST. Q. Now, there was a great deal of open water throughout those tules (in the westerly part of Malheur Lake) was there not?

A. Well, it is according to where you are; some of the sections there were.

The tules were heaviest along the edge of the lake.

Mr. LILJEQVIST. Q. And as you went into the lake, the tules became mere patches, and there was more open water?

A. Yes, sir.

Q. Wasn't there more water in the westerly part of the lake, all the way from the Silvies and Blitzen Rivers west toward the Narrows as you got away from the edges of the lake?

A. Yes, sir.

Q. Wasn't there a main well defined opening of the lake all the way down to the Narrows from there?

A. No, not very much. There were tules most all the way. West of the Narrows? Let me see. Northwest of the Narrows?

Q. No; I do not mean northwest of the Narrows. I mean from the Narrows up toward the mouth of the Blitzen (River) and the (R. 657) Silvies (River) where they flowed in there, wasn't there a considerable opening through the tules where there was a sort of a

channel from the main open waters of the lake, which flowed down through that channel?

A. Well, it wasn't very wide. There was quite an opening, but it wasn't very wide. You would find tules all along there. (R. 658.)

On each side of there you would find tules, and then open spaces. The tules did not grow in very deep water. The tules became matted down in the winter.

Mr. LILJEQVIST. Q. And were packed with snow, and got into the water, and those things that were called tule islands were nothing more than a vast vegetation of tules?

A. Yes, and would float on the water when springtime came. (R. 658.)

Mr. CHARLES R. PETERSON, called as a witness for the plaintiff, testified in substance as follows:

There are not so many tules up there in the eastern part of Malheur Lake. (R. 678.) I have been in the western part of Malheur Lake swamping cattle and in that part of Malheur Lake there are a good many tules; they grow to considerable size. (R. 678–679.)

In the west side of Malheur Lake there is considerable open water; then you run into tules, and they are pretty thick down there. (R. 679.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, on recross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. And from the earliest time you have known, there has been a superabundance of tules sticking up through the water at different places through that western half of the lake?

A. On out west of where we are (the Hayes place). We are not in a thick (R. 1237) tule country. Go west and there is a thick tule country there. There is tules here and there. (R. 1238.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

At the time I tried to come down Malheur Lake in a boat, towards the Narrows, I got in the tules so bad that I could not find any good way to come, and gave it up. I tried to go down on skates, but the tules lopped in. I did not find any waterway that I could take my boat along; when I attempted to find the channel, I got in innumerable sloughs that petered out; if there was an open waterway, I did not find it. (R. 1630.)

Mr. LILJEQVIST. Q. Isn't it your knowledge, Doctor, that this salt grass grew above the high water on the (Malheur) lake in the southeastern part and the eastern part of it?

A. This salt grass is common to our country around Burns. I have a ranch out here, and I am greatly troubled with it on all our second and third soils carrying the minerals; and that was a condition on the east side, not only along the border, but clear up to Crane and Harney; and all our second-class soils grew this class of grass.

Q. Around the south side of the lake wasn't there a salt grass rim between the water and the greasewood?

A. Yes, sir, mostly.

Q. Did the salt grass occur in the southeastern and eastern parts of the lake where the water would lap upon the edges?

A. It didn't depend upon the lapping of the waters. It doesn't depend upon the water level. It grows away above the water level.

Q. But it doesn't grow below the water level does it? (R. 1639.)

A. Where it stays any length of time it kills it out.

Q. There wasn't any rim around the southeastern and northeastern part of the lake?

A. The salt grass came from the foothills on those portions you indicate.

Q. Wasn't that salt grass a line of demarcation of vegetation on the edge of the lake?

A. It had the appearance to me that the lapping of the water up there had made this edge; the waves had made this edge, and cut back, and made an edge along there, and the salt grass came down to that edge and stopped right there. (R. 1640.)

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

I was there at the time Mr. Neal ran his meander line. I know where it (the Neal meander line) goes along north of my place; my place does not lay along—adjoining the (Neal) meander line, but I know where the Neal meander line is north and right near my place. At the time Mr. Neal ran that meander line there was no bank of the (Malheur) lake at that point (north of my place).

Mr. BLACKMAR. Q. Above the meander line and below the meander line is it possible to observe any change in vegetation as you cross over the meander line?

A. No. sir, I never could tell any difference from the line, the land above the meander line and the land below.

Q. And that was true in '95 when the line was run?

A. Yes.

At the time that (Neal) meander line was run there were certain settlers who were cutting hay down below that line, and stacking it, and feeding it in the wintertime. That has been going on from the time I have been there (1888) more or less. (R. 2020.)

From time to time I have cut very little hay below the (Neal) meander line; I think I cut a little the first year I was in there, in 1888. (R. 2021.)

b. 1870–1880

Major JOHN STAFFORD, called as a witness for the plaintiff, testified in substance as follows:

Between the periods of July, 1876, and June, 15, 1877, and September 1, 1877, and June, 1878 (R. 1262–1263), I saw tules, weeds,

and willows in great quantities, but at some distance (R. 1266–1267.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

The grass in this country at that time (1879) was what we called swamp grass. There might have been some sugar grass in it but it contained various assortments of what we would call coarse grass, including salt grass. Salt grass is really kind of a foundation for all those coarse grasses. The salt grass has a very heavy, strong rooting system. It is a very substantial grass and can take pretty near any kind of punishment and really will grow into a hay grass. It is like foxtail which will come out of salt grass. (R. 1355.) Salt grass seems to love this native soil; it does not seem to want it too bad; it can get a little too strong for it, but a soil that is a little bit off color, that is fit for salt grass. There are a good many places in this country away from the lakes where you can find salt grass. In places where there is water, and kind of a little mineralized raised place that has moisture that runs between the hardpan and the top, the salt grass will come; it isn't a bad grass; it is a little rough and a little coarse, but it can be improved; it has a wonderful rooting system, and the grass people are talking about the development of it as forage grass. (R. 1356.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

In the spring of 1874, when I went down to see the hot springs, I observed Malheur Lake from about half or three-quarters of a mile from Saddle Butte. At that time, there were no tules that I ever saw on that side or the east side of Saddle Butte, or along the (Malheur) lake by Windy Point; there never were any tules; that was an open side of the lake. (R. 1779.)

In the fall of 1874, when I went to hunt antelope on the northeast side of Malheur Lake, in the vicinity of what is known as Saddle Butte, we could see some tules at a distance to the west and south; we were not very close to them at that time. We were in the sagebrush most of the time (R. 1780), or in the rye-grass flats (R. 1781).

I was around the north and west end (of Malheur Lake) a good deal, in the tule region, from 1877 until 1882, and for a great many years afterwards.

Mr. BLACKMAR. Q. Now, I want you to describe the west end of that lake as you saw it back there in '77 and the two or three years immediately following it.

A. The greater part of the west and northwest end was—as I say, there was a tule marsh, but occasionally there were patches of greasewood and sagebrush land that were elevated a foot or two, maybe more sometimes, higher than the surrounding tule land, and you found then, you might call them islands, in the tules, but they were

that way when there was no water around the tules either. At times in the year it was pretty dry in a portion of the tules, in the fall of the year. (R. 1785.)

Cross-examination:

The vegetation that grew right next to the water around the northeast side and the east side of the (Malheur) lake was salt grass, I think, and rabbit brush pretty close to that.

Mr. LILJEQVIST. Q. In other words, the first thing that grew next to the water was salt grass, in your recollection?

A. Mostly along by the east side it was.

There was a rim of salt grass around the edge of the water when I first knew it at a point next to Windy Point. (R. 1797.)

In the early days, there certainly were much more grasses growing through the sagebrush than there is now.

Mr. LILJEQVIST. Q. All that country to the east, northeast, and southeast of the (Malheur) lake is practically bare of grasses, isn't that true?

As far as I observed traveling through there I did not see much grass. (R. 1801.)

c. 1880–1890

LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

We found most of the tules on the south part of the island between east and west (forks) of the Silvies River, about three or four miles below the Island Ranch; also over toward Saddle Butte and below Lawen were the most tules. They extended below Saddle Butte and ran back around to the Silvies River, then across the east and west prongs of that river following a bend south of Wright's Point; the lake backed up in there, kind of a neck. (R. 139–140.)

The tules extended out into Malheur Lake as far as you could go after cattle, quite a few miles.

At the east end of Malheur Lake around Windy Point, there were no tules to speak of, except a few bunches. You could look across the lake from Saddle Butte toward the west to Pelican Island. There were not very many tules in there. (R. 141.)

The cattle generally slept in the tules and fed on what was sugar grass there. There was lots of it. Maybe they would eat some tules too, but they laid in them for beds mostly. The sugar grass grows from four to five feet high, mostly where the soil is wet, among the tules, but not in alkali soil. (R. 147.) There is lots of grass that the cattle feed on that is called "wire grass." (R. 148.)

Standing on the Sand Reef looking east, there were some tules on the south side of Malheur Lake. Standing on the Sand Reef on the north side, it would be quite a distance to the tules. There was salt grass along there. (R. 149.)

Cross-examination:

The height of the tules that I have referred to varied. I have seen them 6 or 7 feet high growing in the water; they have to have water all the year round or they dry up, but I suppose the roots do not die; when the water goes off they dry up. (R. 162.) As I went out into the westerly part of Malheur Lake I found tule patches. They were sticking up through the ice about 3 or 4 feet. The ice was formed all through there. Where the tules grow up, there would be a little water coming up through the tule, and there would be air holes down through. (R. 163.)

FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

In 1889 and 1890, while working with cattle along the north side from what is known as Mud Lake to Saddle Butte, we took the cattle into the tules as far as they extended out into Malheur Lake, which in places would be four or five miles and in others a mile to two miles; would vary at different widths along there. There were tules on the north side of Malheur Lake most of the way from the Narrows around north and east to Saddle Butte. (R. 189–190.) There was no ice there at that time, it had all gone. (R. 190.)

The tules ran out in some places from one to four miles all along the north side of Malheur Lake. (R. 192.)

Cross-examination:

The burning of the tules by the settlers in 1889 allowed a lot of water to go down and flow into Harney Lake, and there were all kinds of open places through them. On the knolls which were a little higher, there (R. 203) would be kind of sugar grass and what we called "wire grass"; then in the ponds and lower places would be tules, which would grow up and dig into the soils until they were filled up; there was no channel at all, you might say, and you could tell it when you rode into it because your horse did not get out very easy. A good many cattle drowned in those early days. (R. 204.)

Mr. MARTIN ANDERSON LUCAS, called as a witness for the plaintiff, testified in substance as follows:

When I went hunting down at Malheur Lake in the early eighties (R. 426), near Saddle Butte (R. 419–420), the tules there were awfully thick (R. 420). They were in every direction. The water would come up in places, and in some places there was not any water. This was in the fall of the year. We camped there near Saddle Butte for two nights, then went around Saddle Butte along the south side of Malheur Lake to the Narrows. We had wagons and packs. Along that road to the Narrows, in a lot of places you could not see the lake on account of the tules. (R. 421–422.)

Mr. Robert Irving, called as a witness for the plaintiff, testified in substance as follows:

In 1887 we drove the cattle down on this side of the Meldrum (1877) meander line down the Devine field on the north side of Malheur Lake. The land was unsurveyed on the other side of the meander line. People had settled in there that year. We were near the Brenton place in there. (R. 433–434.) The Catterson place was the first house across the meander line, and the Brenton field. It was the Red "S" Field. We stayed there with the cattle all that winter. There were no fences then. We went down there on New Year's Day, and it commenced to snow; we did not get down as far as we wanted to that night; had to turn the cattle loose; they scattered and went out in the tules and we had to ride the biggest part to get them out. We were newcomers, and we thought they would starve to death, but they were better off in there than if we were feeding them. We got into the tules quite a ways. (R. 434.) You can get into the tules there two or three miles; can not tell how far you are in there; you follow the cow trails and get around where the cattle bed. The company used to go down there and cut hay for the cattle all the time. There were tules in all directions. I can not give any definite estimate as to how far they ran out into the lake. In some places you could look over the tules on horseback, but in other places you could not see over them. In some places they were higher than a man on horseback. In the pursuit of the cattle that winter we were over on all the north side of Malheur Lake as far as we thought the cattle would get out there. The lake was frozen over that winter (1887). We did not break through the ice. We stayed in there until the 10th of February (1887), and the water came down the river. We were afraid we would not get (R. 435) the cattle out, so we drove them back on to higher ground up to the hills. (R. 436.) The lake did not freeze up again after the 10th of February, 1887, so we did not get back that winter.

From time to time I have been in there in Malheur Lake looking after cattle, on the north side, and all around the north end, and coming around to the east end too, the cattle would drive down there to the lake. I can not tell you exactly how many years this covered, but from four to six years the first time.

When I was in there in Malheur Lake in 1887, there were not many people out in those tules. They were all around where they could get hay. (R. 436–437.)

The war between the settlers and the companies commenced in 1887. The companies had all the land on the outside there that was surveyed over the meander line fence, and they had to take their fences down. (R. 437.) When people commenced to go in there, they commenced to burn these tules out. (R. 436.)

Cross-examination:

Mr. LILJEQVIST. Q. And places that looked like nothing but tules, when you got up there there was vast water over the tules?

A. Yes. There were no tules hardly on that northeast end of the lake over by Saddle Butte; there are no tules right up to the banks; it was all water.

Q. The greater portion of the lake easterly from a line running from the Blitzen (River) on the south to the Silvies (River) on the north was open water mostly, wasn't it?

A. No; when you go up to the Silvies River there were lots of tules there.

Q. And along the edge of the lake?

A. Yes, sir. (R. 442.)

Down toward the Blitzen (River) there were a good many tules, but when you got up to this other end of the lake by Saddle Butte there were not many tules. (R. 443.)

Mr. JAMES THOMAS BAKER, a witness recalled for the plaintiff, testified in substance as follows:

Recross-examination:

Mr. LILJEQVIST. Q. I think you had better put into this record the story of how high the tules were, if you will.

A. Well, I have seen tules there from ten to fourteen inches through; yes, sir.

Q. And how did you establish that fact?

A. Well, I was on the lake there riding through the tules and dodging around, and I heard something like sledgehammer blows and wedges, hammering off in the tules there, and it kept drawing nearer, and I came up on some men, and I asked them what they were doing, and they said they had a contract making posts for Pete French to fence the Blitzen with.

Q. Out of the tules?

A. Why, yes; out of the tules.

Q. And if they could row over to the tules in a boat, they had some water in Malheur Lake, didn't they?

A. Yes, sir. (R. 587.)

Mr. GEORGE A. SMYTH, called as a witness for the plaintiff, testified in substance as follows:

I was around the Sodhouse for the first time in 1885; there were tules around there; I did not go down into them, and cattle stayed on outside mostly; when I was there with my horse and looked out it appeared there were tules out for some distance. (R. 668.)

The first time I went down the Narrows was in September, in the '90s, after the bridge was built there; as I crossed there, there were a good many tules east of the bridge. There was water running under the bridge at that time. (R. 669.)

I have been in the west end of Malheur Lake around the edge, and there were a good many tules in there. The first time I was down there was in 1890. (R. 669–670.)

Cross-examination:

I have seen tules around Springer's Spring. (R. 671.)

Mr. GRANT THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

When I was down looking at haying land near Lawen in Malheur Lake in July, 1887, the Lawen country that I am speaking of was interesting; I think the water was backed up from the lake; in fact, it looked like a vast area of tules there with now and then a high knoll that you could see, or open spot in the tules, but from all appearances along there is looked like a vast marshy place; it was quite a ways before you could come to the lake proper. The tules were so high you did not have a good vision of the country. (R. 700.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I think there were possibly forty thousand head of cattle that wintered in the tules in the western half of Malheur Lake. (R. 740–741.) At the time I went in there it was in July, although I would not be positive; it was very warm in there, and the tules were much higher than your head on a horse, and they were dense. (R. 741.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, testified in substance as follows:

When I came there to Malheur Lake in 1885, there were a good many tules down below the place where I now live. There was lots of water on the Caldwell homestead; it seemed to me the Blitzen River moved the water that way; and then another part of it went to the Sodhouse Spring and divided up there about in the middle; and there was grass (R. 826) and tules. Tules in low places, and sugar grass and clover on the knolls there.

On the west half of Malheur Lake, as I call it, there is vegetation clear across. It runs about north.

Mr. BLACKMAR. Q. Well, since you have known it, it has not been much more than swamp, has it?

A. No.

Q. Are you talking about Malheur Lake or Mud Lake?

A. Malheur Lake. (R. 827.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, when you got up there in the early days on a hill and looked out over that tule country, did you see a lot of water through there?

A. Well, north there is vegetation clear across. Well, the west half of the lake has vegetation, and the east half is more open.

Q. Through that vegetation was there any open water in the west half of the lake?

A. Well, it was pretty well covered up. There was a little place called Swan Lake there.

You might say there were channels in there, but they are a little different in there, they had tules in them. (R. 836.)

1883 was the earliest that I saw Malheur Lake.

Mr. LILJEQVIST. Q. Has there been any difference in the growth of tules there from the time you saw the lake? I am trying to find out did the vegetation grow more and more as time went on.

A. I believe it has a little. (R. 837.)

Mr. JOHN L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

East of our house (at the Narrows), and along the border (of Malheur Lake) there were tules east of the Alva Springer place, the springs, there were tules around that vicinity; just how far east they extended I really don't remember, but up to there it was pretty solid with tules. The depth varied north, or as you went from the Narrows, that is, it widened out more like a "V" shape; it was farther into the clear water and the borders of the lake extended a little (R. 895) farther out, and the land was more level, and the water spread over farther. (R. 896.)

Mr. JOSEPH WARREN BUCHANAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

With reference to whether there is any particular growth of vegetation to indicate the margin of the (Malheur) lake, on the west side, you can not get to the edge of the lake, because there is a big lot of tules in there, and it is quite a ways from where the water stands all the time; that is, on the west side. I never went into those tules away south by Campbell's place.

Mr. LILJEQVIST. Q. Do you know where those tules were located, and where the (Neal) meander line was?

A. Well, we had our plats along with us that time, so that we had a pretty good idea of where it was; yes.

The (Neal) meander line was not out into the lake farther from where we were standing. There were quite a lot of tules inside of the meander line. We had to inquire from residents where the line ran, and with the plats we could locate it fairly well. We did not go over every subdivision, but we got the general character of the land in order to place a valuation on it. (R. 930.)

Mr. JAMES M. BRANDON, called as a witness for the plaintiff, testified in substance as follows:

When I first came here there were not very many tules in the east end of Malheur Lake. The cattle up there fed on a lot of salt

grass that was on the shores, when the lake froze up solid they would go on the ice away out on the lake. (R. 967.)

Mr. JOSEPH WILLIAM CLARK, called as a witness for the plaintiff, testified in substance as follows:

There were a good many tules down there in Malheur Lake between a point west of Saddle Butte and the old town of Lawen, when I was riding after cattle about (R. 1024) 1886 or 1887 (R. 1022). A good many of the tules were higher than my head when I was on a horse. (R. 1024.)

I have not seen the tules burned off, or any evidence of it on my place or any place in the lake where the settlers or ranchers have burned off the tules; I have seen fire down that way, but I can not say that I have seen a settler burn tules off his place. I have seen places where the tules have gone, but the cause of it, whether by fire or not, I could not say.

In the different places where the tules used to be in 1889, which have disappeared, there is sugar grass, wire grass, and foxtail. Sugar grass grows in a little water. (R. 1026.) Salt grass will grow around the edge of the water; I do not know whether it takes much water for that, as I am not so familiar with it. I have never seen ryegrass in there, and I have not seen any bluestem grass in there. (R. 1027.)

Mr. ROBERT HAMILTON BROWN, called as a witness for the plaintiff, testified in substance as follows:

When I went across (the western half) Malheur Lake with a team hauling some bucks in 1889 (R. 1084) the biggest part of the lake bottom had been burned, and there was nothing there, only ashes, where there had been tules. There was one place there where there was nothing on it at all. The tule beds had the appearance of being burned off, and it hadn't been very long since they had been burned off, either. (R. 1086.)

Mr. GEORGE FRY, called as a witness for the plaintiff, testified in substance as follows:

When I was driving that stage along the road through the (Malheur) lake it seemed to be tules all the way across. Of course, there were some depressions in the lake there that had a little water in them. The road followed kind of a ridge in the bottom of the lake. (R. 1129.)

Mr. MARION HORTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Did you see any tules sticking up out of the water, or sticking up at all in the area out where Cole Island now is? A. Yes; I believe there was tules. (R. 1473.)

Mr. JOHN EDWARD LOGGAN, called as a witness for the plaintiff, testified in substance as follows:

In 1887 or 1888, when we went in a boat which was in the Silvies River near what is known as the Adam George place, we went out so that we were on the (Malheur) lake; you could see out on the lake (R. 1476); we did not go into the (Malheur) lake very far because it was a hard matter to get back, to get your channel to go back where you went out. We would just go down in this channel, and we were hunting; we would probably go down a ways and find a tule nest or a bank of tules; one or two of us got on it, and the other fellows drifted around; there were channels and tules all through that country; in those days there was not any banks, everything was tules; only right on the river, and we kept along these tules and never got much outside the tules.

We went far enough out in the tules so that we could see the open water in the center of the lake. After you would get out of the channel, as I remember it, it was all tules for a long way out, although there would be channels; there would be a little bunch of tules there and a little bunch of tules here, and you would work out through there, maybe some would be more on a channel than others, that is, more defined channels than others.

Cross-examination:

Mr. LILJEQVIST. Q. How wide an area was this tule patch you went through hunting from the edge of the lake out to where you got the open water?

A. Well, that was a long time ago and it was all tules. There were not any roads in there much.

Q. I mean from the edge of the (Malheur) lake out into the lake, how wide an area?

A. You could not hardly tell when you got to the lake; I recall when I first went down there that whole area was a tule bed from the time you got to Lawen onto the lake, except where you would find patches of grassland, but there would be tules every place; you would look across it, and it would look like it was all tules. (R. 1482.)

It is farther than three or four miles down to the (Malheur) lake and we hunted all through that country.

I know where the Herman Ruh place was in those days; we went down into that section; it is not far from what we call the Adam George place. There were tules from Lawen to the Herman Ruh place. The whole thing was tules. We did not hunt there; we would go onto the lake where we would get on the water where the birds would fly over us more. (R. 1483.)

I never went out in the western part (of Malheur Lake) at all; nor in the southern part of it in those early days. (R. 1484.)

Mr. ORIN EUGENE THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with salt grass, which is a grass common in this community; I have fed stock on that grass from time to time; my experience is that it seems to grow principally along on alkali soil; I could not say that it requires considerable moisture.

I have observed those posts west of Windy Point, which were erected by Mr. Benson (the warden of the Lake Malheur Bird Reservation), to make the line of the Bird Reserve; I have seen salt grass west of those markers, and I have also seen it east of those markers.

I have had occasion to observe some the effect of flood water upon salt grass. (R. 1508.) My experience has been that I have seen the water out over it, but so far as killing it is concerned, it did not seem to do it unless it would stand on there for quite a while; by "quite a while," I mean, I could not say just how long, but this bank we speak of at Windy Point at one time there was no salt grass on it at all, and since these dry years and the lake has gone dead, there is salt grass clear across to Pelican Island there now. (R. 1509.)

Mr. GEORGE MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

There was mostly salt grass on my place.

(NOTE.—The George Marshall place is located in lots 9 and 10, the west half of the northwest quarter and the southeast quarter of the northwest quarter, section 36, T. 26 S., R. 31 E., south of the lake. That was the land that was patented to him.—Pecore. R. 1689.)

The WITNESS. There were tules above and below the (Neal) meander line on my place; on my place there were tules, some tules all over most of the place.

I have had occasion to observe how salt grass stands the water. Water upon salt grass makes it better (R. 1691); salt grass grows outside the water, but when the water comes up and irrigates it, floods it a little, after a few days it makes it better. If you flood salt grass and keep it under the water long enough it will kill it, but I have found a little water is a good thing for it.

Mr. BLACKMAR. Q. These other witnesses have testified that salt grass grows on alkali soil. Has that been your experience with it?

A. Salt grass will grow anywhere if it will get moisture enough. (R. 1692.)

Cross-examination:

There are some heavy tules right below my place; some heavy tules along the Spring Branch and along the (Blitzen) River.

Also north of that land there are heavy tules across there.

Mr. LILJEQVIST. Q. And they started practically at your line, didn't they? Those tules started practically at your lands, and extended up on both sides of the Blitzen (River)?

A. No; when they got to my line there was grass.

Q. You mean south of your line?

A. North of it.

The grass extended probably a couple of hundred yards north of my line (on my place), then there were tules.

Mr. LILJEQVIST. Q. And you didn't take that grass in at all, then?

A. No.

Q. You didn't want it?

A. No. (R. 1700.)

Mr. EMANUEL M. CLARK, called as a witness for the plaintiff, testified in substance as follows:

I have seen salt grass up there on the Island Ranch; quite a bit of it. (R. 1738.)

Mr. GEORGE WASHINGTON SIMMONS, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Now, on your property and north of you where the (Neal) line went through, was there any difference in the vegetation?

A. No; it was practically all the same.

Q. What kind of vegetation did you have on your property, as you remember it?

A. Oh, it was a mixture of all kinds of grasses. Some flags and some tules. (R. 1750.)

Mr. EDMUND J. MARTIN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In the western half of Malheur Lake, there were a lot of tules; when you got up in there, there was tules all over; when we got into those channels we could not see over those tules. (R. 1923.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

The grass is just as good below the patented land as it is above, except this year it is very dry on the surveyed land.

Since 1888 we have had on my property some sugar grass, some foxtail, salt grass, wire grass, and wild grass.

Mr. BLACKMAR. Q. And I presume that the different kinds of grasses grow according to the amount of water that you get on them?

A. No; it seems to me like it has always been that kind of grass ever since I have been there. Of course, there is tules. (R. 2068.)

Cross-examination:

When I first knew it (Malheur Lake), there were all kinds of tules growing there, and there is yet. In some places they were as high as my head and over.

There were channels all through those tules, and open places all through them. The people went out in the channels and open places duck hunting.

There is not a rim of salt grass around my deeded lands, it just looks to me like everywhere a little salt grass. I have seen mighty good salt grass that the water would run over, the (Blitzen) river water run over; then run off, and when it dried it made pretty good salt grass.

Mr. LILJEQVIST. Q. Isn't it a fact there was a rim of salt grass around the (Malheur) lake, a well-defined rim?

A. No; it didn't seem that way to me; it seems to me that there is lots of salt grass, there is no doubt about that, but I can not say that there is any particular line of it. It is out in the middle of the (Malheur) lake; all over those high places is salt (R. 2088) grass; not all over, but in some places.

The salt grass grows along the water's edge as a rule; where the water floods it, it does, and after the water goes off of it. In a measure the water has to go on it and off of it before you find salt grass. (R. 2089.)

There was all tules out in front of my patented land; there might not have been right that identical year, but ever since I can remember it seems to me there has been tules in that country. (R. 2090.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, testified in substance as follows:

With reference to the salt grass that I have referred to down there on the east side of Malheur Lake (R. 2180–2181), there was quite a strip of salt grass down there when I first saw it, and for many years afterwards. When I examined that country a few days ago there was brush growing where the salt grass used to be, and the salt grass was practically eliminated; there was some salt grass, but just scattering bunches, where there used to be a stand of salt grass.

Prior to 1890 the salt grass came up to that cut bank; grew right up to the edge of the cut bank. (R. 2181–2182.) Beyond that cut bank there was very little vegetation on the east side.

I do not recall that there was any variation in the location of the salt grass along the east side (of Malheur Lake), that is, near the cut bank.

The salt grass was up there around the Stauffer corral, and also down at that part where the bank faded out.

I did not observe (on my recent inspection) any salt grass growing where the water formerly stood, but I only went there for the

purpose of trying to locate the old (Stauffer) corral—that is, to fix the location of it—and I did not give any particular attention to the salt grass, except to note the difference with reference to the growth of salt grass between the bank and the sagebrush. As I said before, what was formerly a sodden area of salt grass is now covered with quite a growth of greasewood (R. 2182) and sagebrush, and scattering salt grass along the brush (R. 2183).

Cross-examination:

In the early days the tules were quite rank in the western part of the (Malheur) lake; they were a mixture of tules and grass and flags and pond lilies. I remember the flags grew in the channels more than the tules. (R. 2194.)

d. 1890–1900

Mr. LOUIS WOLDENBURG, called as a witness for the plaintiff, testified in substance as follows:

On the place that I homesteaded, known as the Herman Ruh place (located in section 25, T. 25 S., R. 32 E.) we cut two or three loads of hay, mostly tules or flag grass that grows along the tules on that place, in the summer of 1891. (R. 749–751.)

Mrs. EFFIE L. DUNN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There were quite a lot of tules down in the (Malheur) lake in the early days; a good deal of sugar grass, and then on top of some of the knolls there would be wire grass. Since they have burned the tules and cut them, as years went by, a better quality of wild vegetation has grown up. (R. 856.)

Mrs. JULIA ANN CLARK, called as a witness for the plaintiff, testified in substance as follows:

When we moved in there on the George Thompson place there were a good many tules there. I do not think they tried to cut the tules; they cut the sugar grass and the wire grass, but not the tules, although they might have cut some. While I was there to my knowledge they did not cut the tules or burn them off so that the grass would grow on the place. (R. 1012.)

Mr. ROBERT DILLARD BAKER, called as a witness for the plaintiff, testified in substance as follows:

I was in there at the Red "S" Field one spring, and it was all tules around there; I was in there just one day as I remember.

Mr. BLACKMAR. Q. And from where you sat on your horse, could you see tules extending out into the lake for some distance?

A. There were tules there. I don't know that I saw the lake. It was all tule marsh down there. (R. 1079.)

Mr. LEROY BUNYARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The distance the tule line ran out from the edge of the (Malheur) lake off the northerly side varied from half to three-quarters of a mile in places; where the river flowed into the lake it wasn't so far, probably a couple or three hundred yards. Out beyond the tule line that extended half to three-quarters of a mile was open water.

Mr. LILJEQVIST. Q. That condition existed about what part of the lake; just describe it. From what place to what place?

A. That was from where the Silvies River ran in around—well, practically up to the Narrows, I presume.

I was not so familiar with Pelican Island; I hunted mostly toward the west, toward the Narrows. (R. 1158.)

We did our hunting there where the Silvies River ran up to south of John Gregory's place at the Sand Reef.

Mr. LILJEQVIST. Q. There, as I understand it, the tule line was about the way you described it?

A. Yes.

Beyond that it was open water, and once in a while you would see a small patch of tules way out. (R. 1159.)

Cross-examination:

There was a mud line along the edge of Malheur Lake, but not beyond the Thompson Island and the meander line. What I call a mud line is where nothing grows but tules and from there on out to the center of the lake. The tules grew half to three-quarters of a mile out from the northern bank of the lake. The mud line is where the edges of the tules start to grow, and where the edges of the tules started and nothing else grew but tules; I mean a mud belt. (R. 1168.)

Redirect examination:

The line that I have referred to as the meander line is the east and west fence at the north part of the (George) Thompson property. (R. 1168.)

Mr. FRANK CATTERSON, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. And this stuff they call foxtail, what kind of ground does that grow on?

A. It is grown in the (Malheur) lake now. In the lake bed. It grows on low ground.

It does not grow on the same kind of ground that sugar grass grows on; foxtail grows a good deal where there is no sod. (R. 1187.)

Cross-examination:

Mr. LILJEQVIST. Q. Around the Neal meander line on the north side how wide was the tule belt?

A. Well, there was quite a lot of tules. (R. 1191.)

Recross-examination:

Salt grass grows around the east edge of the (Malheur) lake.

Mr. LILJEQVIST. Q. Where the salt grass stops, is that ordinarily the high-water place in the lake?

A. I think it was on the eastern side—the east side. (R. 1195.)

Mr. SIDNEY COMEGYS, called as a witness for the plaintiff, testified in substance as follows:

When I lived on the Billy Dunn ranch (in the nineties) the only crop we raised was wild hay, mostly sugar grass; it grew pretty high; but it was awfully rank; I cut as high as 300 tons of hay off a quarter section. There was no salt grass there, but there was a little different kind of grass that grew which I do not know the name of; it was kind of a wild grass; it got to be a good quality of hay every year, from year to year as you cut it.

There are many places in this valley away from the (Malheur) lake where you get salt grass. (R. 1447.) It grows on alkali soil.

When we first came to this country in 1886, I was around Windy Point, but I was just a small boy and I could not remember but very little on the trip.

In later years, we used to ride in there for stock a little during the late nineties, generally in the fall of the year.

I recall a little bank up there west of Windy Point (R. 1448); it is quite a bank along there.

In the days when I was up there, the vegetation around Windy Point was just salt grass and a little greasewood, which extended out east of the bank we have identified, pretty close to Windy Point; it extended about half way I would say.

Mr. BLACKMAR. Q. Could you give me some estimate in yards?

A. I think it must be a little better than a mile probably from Windy Point to this bank. It is probably a half mile, or something like that, my best recollection.

Q. Coming west from this little bank there, how far would you say that the salt grass extended down to Pelican Island?

A. Well, I don't just remember how far it did extend. The water some years was out closer to the bank, then it would recede away. I could not say exactly how far it was. I know that it got pretty low at different times out toward Pelican Island. (R. 1449.)

Cross-examination:

There was some salt grass between Windy Point and the bank of the (Malheur) lake.

I do not know whether that is where the water would gather in the depressions from the precipitation. There was a rim of salt grass right around the bank there; the salt grass grew up pretty well close to the lake, to the ridge. (R. 1461.) I do not remember whether there was any salt grass that grew inside of the bank; it was an alkali formation. (R. 1462.)

Mr. ORA WINFIELD HILL, called as a witness for the plaintiff, testified in substance as follows:

When I first went onto our property (the Showen place) there were tules practically all over the place. We would burn them off in the wintertime, and kind of kill the tules out; and the hay would come instead of the tules. (R. 1541.)

Mr. A. A. REINEMANN, called as a witness for the plaintiff, testified in substance as follows:

The hay on our (Reinemann) place was mostly wire grass; some sugar grass, and red top; most of it was wire grass. We had some salt grass on the knolls; it would start pretty well down and run over the tops of them (the knolls). (R. 1667.)

Mr. JOHN J. HEINZ, called as a witness for the plaintiff, testified in substance as follows:

At that time (1895) I did not have any salt grass on my place; there was sugar grass.

The water we got on our property came from the Silvies River.

Mr. BLACKMAR. Q. Did you get much of a back up from the Malheur Lake there?

A. Well, if we did, I didn't see it; I generally moved out before the back water would come. I would get the water shed from the river, you see.

I did not cut any willows in there, but I had been down on the (Silvies) river, on the Showen place, just below me, and I saw a lot of willow stumps there, some probably a foot above the ground, some two feet, and I went down with my team and cut those stumps for wood. They were dry stumps. They stood there. They were not floating. I do not think they were over 100 yards below the (Neal) meander (line), they way it jogs in there. (R. 1682–1683.)

Since I have moved in there there has been a great many tules cut off and burned off, both above and below the (Neal) meander line.

Mr. BLACKMAR. Q. And as the years passed on after you came in there, the hay land below the meander line was increased, was it not?

A. Yes; as fast as we took the tules the sugar grass would crowd in. (R. 1683.)

Cross-examination:

There were tules immediately below my place to the east. (R. 1684.) They were from four to six feet high. (R. 1685.)

Mr. JAMES A. TURNER, called as a witness for the plaintiff, testified in substance as follows:

There was no greasewood around my house (at the place I own about a quarter of a mile south of the Ben Ausmus house). (R. 1720.)

Immediately north of my place on his (Neal's) meander line was salt grass. Where I took my place up it seemed to be kind of

a raise that ran north and south and went back to the lake, and at that time there was some scattering salt grass that grew on it, and other kinds of grasses, the names of which I do not know, but other grasses grew on it, and I took my place where it bordered in those days on what we called the edge of the main lake. I had plenty of salt grass on my place; along on this piece of high ground that ran along in north and south there was salt grass that grew on that. (R. 1723.)

There was considerable salt grass below the Neal meander line near my place. The salt grass laid north and northeast of my place. (R. 1724.) There was no salt grass south of my place, or west of it.

My experience with salt grass is that if the water gets up over the salt grass, and it does not cover it entirely, it makes it better and it grows better, but if it covers up for two or three months, something like that, it would kill it. (R. 1725.)

Cross-examination:

I do not know how much of that land that I had had salt grass on it; I will say there were probably 25 or 30 acres of it. (R. 1730.)

Mr. ALVIN C. SPURLOCK, called as a witness for the plaintiff, testified in substance as follows:

We have salt grass on our place, and there is salt grass on some of the places farther north from our place. There is also some salt grass on the ridges farther south from our place. (R. 1757.)

Mr. CHARLES A. SPURLOCK, called as a witness for the plaintiff, testified in substance as follows:

The grass that grows on my homestead is a sweet grass and sugar grass and wire grass.

There is salt grass on the ridges on both of my places [the one owned jointly with his brother, Alvin C. Spurlock, and his homestead]. (R. 1765.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, testified in substance as follows:

There is a difference in the vegetation on my property above and below the Neal meander line. On the outside of the line there is sagebrush, and on the lower side it is grasslands mostly, and tules. I could not say how far in feet the sagebrush is from the (Neal) meander line. It comes right to the meander line in places, I think, and at other places it is back from the meander line, but I could not estimate the distance in feet. (R. 1824.)

I have salt grass on my place. (R. 1825.)

There is salt grass down below my place in the (Lake Malheur) Bird Reserve in some places since the dry years; and it grows farther back than it did when the water was high.

Mr. BLACKMAR. Q. As a matter of fact, all through the (Malheur) lake from the hills you have salt grass on them?

A. There is salt grass on them; yes; in places.

Q. With this deficiency of water down there the salt grass is spreading all over the lake, isn't it?

A. Yes.

Q. Or what used to be the lake?

A. Yes.

Wire grass stands quite a bit of water, but water will kill it out, too, if it is on it too long.

I have wire grass down on my place down there, in places; there was when the lake was up; not very much now, it has been so dry the last few years. (R. 1827.)

Cross-examination:

Mr. LILJEQVIST. Q. Do you know where the water ordinarily came in the spring around your place?

A. Yes, sir.

Q. Where does the salt grass grow with reference to where the water ordinarly came in the spring?

A. Why, right along the edge of the water generally.

Q. Then was that salt grass strip the margin separating the water from the dry land, approximately?

A. Well, no, farther down in there would generally be some wire grass.

Just below the salt grass would be a little wire grass; it is kind of hard for me to tell how big that strip would be; I don't know for sure. Most generally the salt grass would have immediately below it a wire grass strip.

Mr. LILJEVIST. Would that wire grass be covered in the spring by the waters of the lake?

A. Yes, it would.

Q. Now, if the lake was higher for a number of years, would that salt-grass strip recede and go up higher on the dry land.

A. If it was higher it would, yes. (R. 1833.)

Redirect examination:

Mr. BLACKMAR. Q. Since you have lived on that place has the area of salt grass on your place changed from year to year? (R. 1840.)

A. That would be changed by the water rising and then going down a little.

Q. Let me see if I have got it right; The farther up the water comes, then the salt grass goes up with it?

A. It grows out farther, yes.

As the water goes down, then the salt grass follows it on down with the water. That changes according to the water year, it changes with the water. It had to have the water about right to grow. (R. 1841.)

Recross examination:

Mr. LILJEQVIST. Q. Then substantially all the time you have lived there have you had salt grass along your north line?

A. Well, we have had the salt grass around the water, yes.

I know the (Neal) meander line is where the (Lake Malheur Reservation) Bird Posts are. As a general thing, there has not been a salt-grass strip north of those posts, it has grown on the outside (R. 1845) of them, and right up to the posts in some places. (R. 1846.)

Redirect examination:

Mr. BLACKMAR. Q. And in some years it has been the other side of the posts, hasn't it?

A. Yes.

Q. Out toward the (Malheur) lake?

A. Yes, as the water receded, of course.

Q. And where the salt grass is depends entirely on where the water has been the previous year?

A. Yes.

Recross examination:

The salt grass is the water's margin, it has to have the water just right to grow. (R. 1846.)

Mr. JEFF CAWLFIELD, called as a witness for the plaintiff, testified in substance as follows:

When we first went on to our place (the Cawlfield place—his father's place) the vegetation on the ridge there consisted of greasewood and salt grass, and like the south edge of the (Malheur) lake, you ran into the tules and (R. 1883) sugar grass, and outside on the north, there were flats that had foxtail on them where the water had been and receded. (R. 1884.)

With regard to the kind of vegetation above the Neal meander line, on my place there was a knoll where I had the house in that corner that was a little higher than the other, and there was sugar grass around the edges of it. (R. 1888.)

The character of the vegetation on the Reinemann place when I lived there consisted mostly of sugar grass except out on the edge south, where I think there was some salt grass. Then on out towards the (Neal) meander line, and across that line, the vegetation consisted of some tules at the back end of the field, and sugar grass. The sugar grass and tules crossed the (Neal) meander line, but the grass on his (the Reinemann) place was at the south end.

On the Simmons place they had sugar grass on the north part of it. On the south part of it, it was about the same as the Reinemann place. There were knolls and one or two sloughs and salt grass.

Mr. BLACKMAR. Q. As you went out to the lake across the meander line, was there any change in the vegetation on the McCoy place? (R. 1890.)

A. No; on the McCoy place, I don't think there was a bit of change.

That was sugar grass and tules. It was the same as the Reinemann place when I lived there. (R. 1891.)

Cross-examination:

On the south side of Malheur Lake, the vegetation immediately below the (Neal) meander line consisted of sugar grass and tules. They (the settlers) kept gradually cutting out into it; they would cut in places clear across (the lake) that was before 1899.

My brother, Frank Cawlfield, is here; he just arrived here to-day. (R. 1903.)

Mr. W. A. CAMPBELL, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. What kind of grass did you find in this place?

A. Well, we found wire grass, and we found this salt grass, and we found tules. Anything we cut we called hay. (R. 1972.)

e. 1900–1910

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

In about 1901, I went up through the Narrows into the west end of Malheur Lake in a rowboat, and there were a lot of tules there; they were pretty close.

In some cases, we had to push the boat through those tules. (R. 630.)

Mrs. FANNIE SMYTH, called as a witness for the plaintiff, testified in substance as follows:

I was down to the D. H. (Rye) Smyth place down in Malheur Lake once. (R. 1068.) I may have been there oftener, but I don't remember. (R. 1068–1069.)

I was married the second time in 1902 and it was before that that I was there. (R. 1069–1070.)

I don't remember seeing Malheur Lake from that place, unless you call Malheur Lake down there by the Narrows. As I looked out from that place I could see tules around there.

I have been down to the Sodhouse (R. 1070) and to the Sodhouse Springs. I have been down there to Mr. Alva Springer's place, but I do not think I have been there at all seasons of the year, although I have been there a few different times. As I looked out toward Malheur Lake from the Springer place, I could see a good many tules out there, and I saw lots of haystacks there. I have been on Mr. Smyth's place I don't know how many different years, can not remember, but I have been there a good many years, and what I have just told you is what I saw generally on those occasions. (R. 1071.)

Cross-examination:

I have not been up on a hill to see through the tules. (R. 1071.)

All I know is what I saw on the flat land. I saw some tules and the water and the birds. I do not know whether Rye Smyth's land

was deeded land; it was down there close to the Narrows. I think they were cutting hay there at the time I was there.

I do not know exactly where Mr. Cawlfield lived, but I heard of him living there and I can not tell you whether it was surveyed or unsurveyed land. (R. 1072.)

Mr. JAMES HENRY GIBSON, called as a witness for the plaintiff, testified in substance as follows:

There are a few tules down on my place now. It used to be about all tules when I first went there. I burned them off and then mowed them off. Quite a number of other settlers burned off tules too since I have been in there. (R. 1175.)

Mr. D. H. SMYTH, Junior, called as a witness for the plaintiff, testified in substance as follows:

I do not know what kind of soil the sugar grass grows in; it just grows on the higher ridges; it doesn't grow on alkali ground. (R. 1466.)

Mr. COREY E. SMYTH, called as a witness for the plaintiff, testified in substance as follows:

On that place down there (the D. H. (Rye) Smyth place) we had sugar grass principally. We did not have any salt grass. (R. 1524.)

Mr. ARCHIE MCGOWAN, called as a witness for the plaintiff, testified in substance as follows:

When I was hunting one spring, in February, on the south side of Malheur Lake, in the vicinity of the Haines pump (located in lot 9, section 13, T. 26 S., R. 32 E., south of the lake) (R. 1554–1555), there were a good many tules down in there at that time.

I do not think we went over to Cole Island at all on that trip. I would say we were probably never more than three-quarters of a mile from where we camped there near the shore line. We camped just on the edge of the salt grass and sagebrush; you might say where the salt grass met the sagebrush; we made a little camp and we stayed there a couple of nights.

Mr. BLACKMAR. Q. Now, over on the west end of the (Malheur) lake, say west of a line drawn north and south through the mouth of the Silvies (River), when you first started going down there, were there more tules in there than there are at the present time?

A. Oh, yes. (R. 1556.)

Cross-examination:

When I was down in the south side of Malheur Lake and east of Cole Island in February, near the Haines pump (lot 9, section 13, T. 26 S., R. 32 E., south of the lake) (R. 1555) hunting, there were tules in there. Above the tules there was salt grass; above the salt grass was the greasewood and rabbit brush. (R. 1567.)

Mr. WILLIAM DAVID HUFFMAN, called as a witness for the plaintiff, testified in substance as follows:

The hay on the place which my children own (designated on map Plaintiff's Exhibit 3 as "W. Huffman," and which is about two miles north of the corner of sections 27 and 28, 33 and 34, T. 26 S., R. 31 E., south of the lake, of which there are about 440 acres fenced. (R. 1574–1575), consists principally of sugar grass; that is the principal crop; there is some foxtail and salt grass on the ridges. I have cut as much as half a ton of salt grass to an acre along with other hay, but it hasn't been tall enough to cut for a number of years. (R. 1576.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

The vegetation down there in Malheur Lake has undergone a change since I have been familiar with the lake.

The vegetation has been greatly drawn in as the waters have receded, and as the settlers have prepared the ground for hay, the borders have been brought in. Vast areas covered with tules, and some others having been burned off, and some others having been changed by mowing, and some by the drying out of the ground, there has been considerable change in vast areas.

One time you could only get through on little paths that the stock made through; now you can drive through with an automobile, and so there has been quite a change in that respect.

I am familiar with the plant named salt grass (R. 1603), and I have seen it growing around the (Malheur) lake. (R. 1603–1604.)

At certain seasons of the year there are plants that grow in the open water west of Cole Island. There is one plant that is particularly noticeable by anyone who tries to traverse it in a boat. It is a little weed of a plant that just comes to the surface of the water, and then runs like a vine on the surface of the water, and the leaves lie on the (R. 1611) surface of the water; it comes up in the summer, and it grows so much that you have great difficulty with boats, especially if you are using a little outboard motor, it tangles with the motor, and gives a good deal of trouble. It also puts on a seed that becomes very fine food for the ducks. It washes ashore and I have been there and scooped up a shovel full. It seems to be as good as wheat for ducks; that plant comes over all the water that isn't over three feet deep, and that weed is in the largest body of open water lying west of Cole Island that there is in the lake, and that body of open water I have been on a great deal, both in my own boat and in the boat or boats that belonged to the Government there; and late in the fall, or late in the summer we had a great deal of trouble with that particular weed.

At certain seasons of the year practically all of that open water was covered with this weed. (R. 1612.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff, testified in substance as follows:

On those places (the Ralph Catterson and the Ralph and Minnie Catterson places) we have sugar grass, wire grass, salt grass, and tules; they used to have a kind of a knotty grass down there, but it is all dried up; when I first went there, there was about forty (acres) of it. It is a kind of a three-cornered grass, but it is all killed out, and it doesn't come any more at all. (R. 1708.)

Cross-examination:

Mr. LILJEQVIST. Q. Isn't it a fact around the northeast and southeast parts of the lake, there is a well defined strip of salt grass between the water's edge and the sagebrush and greasewood? (R. 1715.) Around the whole eastern half of the lake?

A. Yes; that used to be all salt grass out there, I would say, for a half mile clear around there, and there was no sagebrush other than right at Windy Point. Back this way, we will say a mile or a mile and a half north, I never saw very much salt grass very heavy in there. It was more toward Pelican Island and in the Jim Mahon field.

Q. Did the strip of salt grass grow above the margin of the lake on the northeast, east, and southeast parts of the Malheur Lake?

A. Yes; there was salt grass there.

Q. Isn't it a fact that the edge of the salt grass was very well defined around that eastern half of the lake, around the edges? Next to the water, I am talking about?

A. Well, I saw it there; there was a lot of cattle that watered in those days, and troughed that out. I don't remember how the salt grass was. I don't remember whether it was heavy up there or not.

Q. I am not talking about the height of the grass at all. I am asking if the salt grass did not start to spring up at the water's edge and extend outwards? (R. 1716.)

A. I would not say that.

There were tules on the John Jordan place and the Carey Brothers place in the Saddle Butte and Malheur Slough country, along there. (R. 1717.)

Mr. CHARLES E. DILLMAN, called as a witness for the plaintiff, testified in substance as follows:

In 1910, when I was down there helping Scott Haley and Borland to hay (R. 1860–1861), I believe there was some little salt grass on some of those highest ridges (R. 1863).

Mr. CLARENCE W. DRINKWATER, called as a witness for the plaintiff, testified in substance as follows:

The hay we raised was all sugar grass. (R. 1875.)

When I first took up my first piece of property, there were tules on it. (R. 1876.)

The salt grass that has been spoken of here is seen a good deal around on the high ridges; there was some salt grass on my father's place. There is salt grass over a good part of this county on the high ridges; salt grass is more or less over the entire part of the county that I have been where there was water—not too much water. Wherever there is salt grass, it is an indication of alkali soil.

Mr. BLACKMAR. Q. Down in the lower parts of these places in the lake, one might say down in the sloughs, there is where you get the sugar grass?

A. Well, no, not exactly; the sugar grass in the lower, and where the water stood for a longer period was tules.

Q. Yes.

A. As I recall it, there was an intermediate sugar grass (R. 1879) that would grow next to the higher ground.

Mr. BLACKMAR. Q. That is what I mean, on the well-watered part and where the soil was better.

A. Yes.

Q. As you understood it, the sugar grass does not grow on the alkali soil, does it?

A. It grows on a ground that is well watered, and it stands quite a lot of water.

Mr. JOHN G. DARSEY, called as a witness for the plaintiff, testified in substance as follows:

There was quite a space of open water in there out from the end of Pelican Island, and all around the south side of the (Malheur) lake. There was very little tule of any kind. It was almost all open water, and very shallow. (R. 1960.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, testified in substance as follows:

In the past I have seen quite a number of willows growing there; they grew up probably six or eight feet high, probably a little taller. (R. 2105.)

On those ridges (near my property) there is a salt grass that grows there that you do not find down in those lower places, in the sloughs, and lower land (in Malheur Lake). (R. 2107.)

There is some sagebrush and greasewood on my land, and quite a bit of salt grass. There has always been salt grass sometime in the year on my land; (R. 2109), there has always been salt grass there while I have been there. I also have some sugar grass up there, and wire grass and different kinds of grasses. (R. 2110.)

Mr. JOE ORMAND AUSMUS, called as a witness for the plaintiff, testified in substance as follows:

Since I moved down there (the Ausmus, J. O. [also Ben] place) in 1904 I do not believe I have seen any tules growing around that place where I planted that grain this year.

The place that we have our grain is in a part (R. 2130) of the (Malheur) lake that in a good many seasons has been open water. Tules sprang up there last summer. Long ones. (R. 2131.)

Mr. JAMES G. BUNYARD, called as a witness for the plaintiff, testified in substance as follows:

We got mostly sugar grass, wire grass, and on the high ridges, some salt grass on that place (the Bunyard Ranch—now Hill Brothers' Ranch).

Mr. BLACKMAR. Q. Who owned the deeded land which joined you on the south? As I understand it, this place ran right up to the deeded land, didn't it?

A. Well, when we first moved in there John Marshall owned it. The grass on the John Marshall place was a good deal the same that we had on our place; it consisted of sugar grass, wire grass, and salt grass.

Mr. BLACKMAR. Q. That is, you couldn't tell by looking at the ground as to which was your land and which was Marshall's land, could you?

A. No, sir. (R. 2164.)

Q. That is, from the vegetation?

A. No, sir.

Mr. BLACKMAR. It may be that you and I do not understand each other on this:

Q. I understand the place you moved to down there was also within the (Lake Malheur) Bird Reserve?

A. The place we moved to when we went there was within the Bird Reserve.

Q. Was that the place you only stayed three days?

A. No. The place we stayed about three days was over by Haley's. The place we moved onto on the south side of the (Malheur) lake was within the Bird Reserve. That tract is north of the John Marshall tract.

SPECIAL MASTER. I thought he was farther out in the lake, but he was nearer?

A. Yes.

SPECIAL MASTER. He had surveyed lands, did he?

A. Yes. He had deeded lands. (R. 2165.)

Cross-examination:

When I first knew it (in the vicinity of the Bunyard place—now Hill Brothers' place) there was quite a bit more tules then than there are now.

Mr. LILJEQVIST. Q. Wasn't that land inside of the meander line a vast body of tules when you first knew it?

A. Well, there were a lot more tules then than there is now. There was more hay to it when I first knew it, too. (R. 2171.)

Mr. HENRY OTLEY, called as a witness for the plaintiff, testified in substance as follows:

On my place (the Henry Otley place) there is just a variety of wild grass, sugar grass, wire grass, and salt grass. There is some salt grass on the ridges up there. (R. 2208.)

We have tules, some wire grass, and sugar grass on that land within the (Lake Malheur) Bird Reserve. I do not believe that there is any salt grass to amount to anything on the high ridges; there is some foxtail. (R. 2213.)

There is not much run-off on those lands (the Otley properties) in that part of the (Malheur) lake, down across the Neal meander line. There has always been more or less tules which stop any fast run-off. (R. 2214–2215.)

There are not many tules above the Neal meander line; a few in the deep sloughs. Most of the tules above the Neal meander line have been cut off. In the improvement of that property (the Otley properties) in the (Lake Malheur) Bird Reserve we have cut the tules down in there from time to time, and the other settlers in there have done the same thing. (R. 2215.)

(No cross-examination.)

Mr. WILLIAM L. FINLEY, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Are there any fixed points down there that you now recall, which you could refer to, and give us some idea of the stage of the water while you were in there?

A. Well, Bill Marshall's old cabin was at the—was down towards the mouth of what is called—the mouth of Blitzen River, below Springer's place, of course, and from there on the water merely spread out into a wide tule marsh. It is (was) shallow after we pass (passed) down into these tules; tules growing six (R. 2299), eight, or ten feet high. We had a good deal of difficulty in finding our way through the marsh, to the body of the lake. We had to—we got lost once or twice; we finally found our way through the tules by tying little white rags to see to meander by out there. And there are these floating tule islands, we call them floating tule islands, tule growth; the roots form a sort of surface and they grow up and die down each season, and that forms a sort of mat surface on these tule islands, where the birds nest in great numbers. Now from there the other only location, several miles as I remember—we had no way of getting the exact distance over to the east end of the lake; now there was Pelican Island between there and the east end, and then straight north; we were over and spent one week getting through the tules on that end, and camped in an old deserted cabin over at the north side. (R. 2300.)

From 1908 to 1917, the same conditions with reference to the tules existed. (R. 2304.)

(No cross-examination.)

GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. Generally, during the years that you have been there prior to 1922, did you patrol this same area in a boat that you have referred to when you made the trip with this party in 1922?

A. Yes, I think I have been over that part of it.

Q. Have you been over other parts of the lake in a boat besides that particular area that you traversed in '22 with that party?

A. Yes, I have been over the area between Cole Island and Pelican Island, all through there.

Q. You patrolled that in a boat, did you, that entire area?

A. Yes. Of course, you had to know your route to get through very easy.

The vegetation through that area is practically all tules (R. 2515); the area I am referring to is the easterly part that I have traversed in the boat. It is practically all tule area, that is, tule islands all over that lake, winding around through it; channels, and similar to the western part, the first part of the western part of (Malheur Lake), it is similar to that. That part in the north (side of Malheur Lake) compares similar to the western part of the (Malheur) lake; I am referring to that part west of the northerly end of Pelican Island, and east of the northerly end of Cole Island. In that area in that vicinity on which there are contour lines shown on Plaintiff's Exhibit 3 there were more or less scattering tules there at that time. (R. 2516.)

Redirect examination:

To a certain extent I would consider the tule islands floating, but not movable. Some roots went down and held them in place. (R. 2541.)

If it was a small island it would sink, but if it was big, it would hold a lot of weight. (R. 2542.)

f. 1910–1920

Mr. THOMAS J. VICKERS, called as a witness for the plaintiff, testified in substance as follows:

We also cut hay in other parts of Malheur Lake away up to Lawen. (R. 249.) I was cutting the hay for myself. This was about 23 years ago. When I worked for Todhunter & Devine we cut hay in the big swamp above the road towards Wright's Point; below where the White House now is on the river, about four or five miles down below. (R. 250.)

Mr. LLOYD B. CULP, called as a witness for the plaintiff, testified in substance as follows:

I drained the place so that I could sow alfalfa, and I did have alfalfa there. That is, I put a canal through it, but now I wish I

had not drained it. The water is a long way from my place. I had too much water, now I have not enough. The first year I went on my place, part of it was kind of swampy. Where it came up to the (Malheur) lake, it was kind of swamp and I had some tules there, but there is not a tule on the place now; they died out.

When I first moved there (on his place), I had some sugar grass, what they called sugar grass, a sweet grass, and that finally died; then it kind of came into wire grass, and that died out. Now there is nothing there. (R. 1848.) I have had quite a bit of salt grass on my place up there. (R. 1848–1849.) There is considerable salt grass between my place and on down south, and between my place and the Spurlock place. Between the two I have a lot of grass.

Mr. BLACKMAR. Q. As you follow it on down around Ausmus' place and Otley's place down there below the (Lake Malheur) Bird Reserve, do you find some salt grass in there?

A. Yes, sir.

It is hard to tell where the lake is there. You go through several miles of tules, and you don't know when you are in the lake. (R. 1849.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, testified in substance as follows:

In the so-called open water, west of Cole Island, there were masses of aquatic vegetation. One characteristic water plant is known as the sago pond weed which is very abundant, and I believe it grows during the latter part of the summer, and it grows over every bit of that so-called open water. The sago pond weed has a small, dark, hard, shiny seed on it (R. 1997), which is one of the most important food plants that occurs in Malheur Lake for water fowl.

Another plant that grows in there, in that so-called open water, is the so-called arrowleaf, which also is a shallow-water plant.

In the western part of the (Malheur) lake, from the Narrows eastward for a number of miles, is characteristic tule swamp, with tule patches and little patches of open water all through that area that I have seen; there are some islands in there which are covered with various grasses. I have not been on the islands at the edge of the water that I could call them islands. Among those islands that I have been on there is very little other grasses. Northward in the fall, you can see the ground is rather rolling hummocky which, at certain stages of the water, would form islands. (R. 1998.)

Mr. LYLE B. HILL, called as a witness for the plaintiff, testified in substance as follows:

On our place there (in Malheur Lake) we had mostly sugar grass; we had a little salt grass on the high ridges; some wire grass, or round grass; and quite a few tules and flags on the low spots. I did not see any greasewood on any of those high places. (R. 2143.)

g. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

I observed the character of the vegetation of Malheur Lake, and while I can not point out now in detail on this map (Plaintiff's Exhibit 3) the various classes of tules, sour and sweet grasses, as well as other grasses, until I have finished a copy of this map which I am now preparing as to the lines as we preserved them, I will give you a general idea of the large areas, however, using this map, Plaintiff's Exhibit No. 3.

East of Pelican Island the vegetation is principally salt grass, and a weed that I have never been able to determine the name of. (R. 91.) Last spring it had some resemblance to a thistle or tumbleweed; it seems to die out.

From Pelican Island west to Cole Island the vegetation is principally foxtail and salt grass.

There are no bodies of tules that I know of east of Cole Island, excepting a small area of perhaps one thousand acres altogether near the north meander line in front of sections 23, 26 and 25 of T. 25 S., R. 32½ E.

Along the west edge of the southern half of Cole Island is a fringe of tules, but the principal area west of Cole Island and below an elevation of 4,090 feet was open lake bed when I first saw it last spring; it didn't have any vegetation on it at all. During the summer there was a small scattered growth of foxtail growing up over it.

From a point north of Cole Island beginning just about due north of the western terminus of the line between sections 28 and 33 of T. 26 S., R. 32 E., and extending along the southern boundary of the lake, there is a very dense growth of tules that grows in a sort of semicircular direction over to a point about north of the meander corner of sections 25 and 26, T. 26 S., R. 31 E., south of the lake; thence northerly to a point just south of the meander corner of sections 1 and 2, T. 26 S., R. 32 E; thence northeasterly to about section 26, T. 25 S., R. 32½ E. That tule bed has an average width of at least a mile and a half generally and is a very dense growth of tules. Of course, it is intermittent and there are spots where there are no tules in the area just described. (R. 92–93.)

There is not much vegetation toward the center of the lake.

From that tule bed as you go down into the western portion of the lake bed, there are intermittent bunches of tules throughout this entire area. The outer margin of the tule bed in that area is at 4,092 feet, and anything between 4,091 and 4,092 feet has indications that it once has been covered with tules. If you get below 4,091 feet there are no tules in the western end (of Malheur Lake). (R. 93.)

Down from a point from the southern terminus of the line between sections 1 and 2 of T. 26 S., R. 32 E., north of Malheur Lake, to about the northeastern portion of section 25, T. 26 S., R. 31 E., south of the lake, there are intermittent good growths of native grasses

that in ordinary years are put up for hay. The grasses grow in among the tules. There is some sugar grass and foxtail grass. It is put up for hay. There are some salt grasses in there, but not very much. Most of the salt grass is in the eastern end (of Malheur Lake); and during the summer months, or during this season, some of the ranchers along the north side of the lake bed, Mr. Otley, Mr. Ausmus, and Mr. Hayes, planted what is indicated on this map, Plaintiff's Exhibit No. 3, near the north center of the large open body of the lake, a grain field. This large area in there was planted to wheat—some of it to wheat, oats, barley, and rye. (R. 93.) A very excellent crop was harvested from that grain field.

Down about a mile north of section 25, T. 26 S., R. 31 E., was another grain field put in by the Hill Brothers, whose ranch is located in section 34, T. 26 S., R. 31 E.

About a mile northeasterly of section 25, T. 26 S., R. 31 E., is another grain field planted by Alfred Marshall, who lives at Voltage, or some of his sons, who live down on the south shore of the lake. (R. 94.)

The higher ground between Cole Island and Pelican Island also has a good growth of salt grass on the higher part of it. (R. 94.)

Mr. JEFF D. BILLINGSLEY, called as a witness for the plaintiff, testified in substance as follows:

For the last eight or ten years, I have been duck hunting around Malheur Lake on the south side. I have been more times on the south side, but I have been around as far as Lawen on the north side since the Reservation was established. (R. 384.) While hunting I observed there were a lot of tules. We were stationed at the Reserve, and there was a point that seemed to run back between a couple of sloughs; I think it was Pelican Island and some other island, but I would not know them apart and probably this was one end of them. There was water around those islands and they looked more like sloughs than anything else; there were tules around the borders. (R. 385.)

Mr. JOHN R. JACKSON, called as a witness for the plaintiff, testified in substance as follows:

About three years ago I was camped with seven hundred to nine hundred sheep about a mile and a half in the Lake Malheur Bird Reserve out from Windy Point. There was a little salt grass there that the sheep fed on and a kind of a weed, but I don't know the name of it. There was foxtail and salt grass there, too. (R. 621–622.)

Mr. ARCHIE MCGOWAN, called as a witness for the plaintiff, testified in substance as follows:

I remember a big fire down there in Malheur Lake about seven or eight years ago; it was quite a peat fire, as we called it, or a tule fire. (R. 1563.)

That fire, I believe, originated not far from the Narrows and spread eastward along the north side of the lake. We called it the peat fire; it was old tule beds where it gets down and burns kind of into the ground. I was down there and examined it and saw it burning. I think it burned for quite a period, and they thought they had it subdued, but it started up again, and I think it burned for over two months. That was six, seven, or eight years ago.

(Dr. HIBBARD. I could not give you the year. I have visited it several times, but I could not give you the year. It is a matter of record.) (R. 1564.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

I remember the fire down there (in Malheur Lake) among the tules in 1924. I helped fight the fire. We have taken some pictures of it. There were beds of tules, and of course those tule roots were very deep, and it was very dry; they would burn. That is about all.

It seems to me like that caught fire sometime about the 22nd day of April (1924) and lasted way until the fall sometime.. (R. 2076.)

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I observed a salt grass rim around the eastern and northeastern and southeastern part of the lake.

Along the peninsula north of Pelican Island for perhaps nearly a mile north of the south end of the peninsula; and along the peninsula east of Pelican Island, in section 28, T. 25 S., R. 33 E., north of the lake, there is a salt grass rim out anywhere from one hundred to two hundred yards west of the base of the steep bank. There is a margin of salt grass along the west of the bank through section 34, T. 25 S., R. 33 E; and probably for half a mile south of that a fairly distinct margin of salt grass, and that is the only place I saw a salt grass rim that is noticeable. (R. 2277.)

h. Dead sagebrush and greasewood

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

We used to camp around from Saddle Butte, around to the west fork of the Silvies River, and where the lake ran around those points, there was a lot of dead sagebrush at the edge of the (Malheur) lake. Some of the places where the water stood the sagebrush died. We used it for fuel when we camped while working with cattle. (R. 149.)

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

I have not seen any dead greasewood down in Malheur Lake. (R. 225.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

When I was down there in Malheur Lake, trapping in 1883, two or three hundred yards away from Pelican Island, I have seen the stubs of dead sagebrush sticking up right in the (Malheur) lake bed, and the roots and everything where they grew. (R. 268.)

The dead sagebrush condition that I have testified about in Malheur Lake bed near Pelican Island also obtained around Cole Island. (R. 269.)

That dead sagebrush that I am speaking of was quite a ways down west of Cole Island. You would find it in different places. I have seen it as far down as Campbell's place and Haley's place and Pinto Tom's place. I have seen the dead sagebrush back in the channel a hundred yards or more from the top of Cole Island. After we would leave the little boat, we would go around the island and around the outer edges (R. 270) and get the muskrats. They lived on those islands, and this dead sagebrush out a hundred yards or more, and back out where it ought to have been a lake, where it receded and went back. I am able to distinguish sagebrush from greasewood and I know sagebrush when I see the bark. Some of the dead sagebrush that I saw would be about an inch in diameter, and three inches around, or two inches, and so on. It was yellow sagebrush, the same that you see in the fields. There are two kinds of sage, one called the water sage, and the other yellow sage. The water sage will grow where it overflows, but the yellow will not. I am able to distinguish the yellow sage from the water sage. One is a little small fellow that grows up, and the other has a big body to it, and the dead sage that I found down there was the big sage (R. 271); it was the yellow sage. (R. 272.)

Cross-examination:

I have seen sagebrush on Cole Island and down on the side of the island. This sagebrush was also dead, and in seasons of ordinary high water the sagebrush would be covered too. (R. 291.)

The sagebrush that I saw near Pelican Island was one to three hundred yards back from it. The sagebrush was about a foot and a half high, and it was yellow sagebrush, which dies out easiest from water; and water will kill it, and this sagebrush that I saw was dead. I have also seen some sagebrush stub in the water in the lake (R. 289), and the water got up high enough to kill it. The water sage is a little small sage, and this particular yellow sage I have seen at that same place under water. It would overflow, but then we were out there when I have seen it dry. It was dry there at that time of the year, in the fall. It is my judgment that in the normal spring season of ordinary high water of Malheur Lake that sagebrush must have been covered with water, but I was not there to see it though. (R. 290.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I have seen dead sagebrush all around Malheur Lake; what they call Windy Point; and all around different places. (R. 506.)

Cross-examination:

I have seen dead sagebrush stumps out there at Windy Point (R. 517), and I have seen them around Malheur Lake and in Mud Lake. I have seen some right in the (Malheur) lake; all over, in places; I could not tell you where; I saw it pretty well on the lower end of it (Malheur Lake); they were dead; and I could not tell you how many years they were dead; it might have been a hundred years old, might have been more; the greasewood was dead too. (R. 518.)

Mrs. OLLIE DARSEY, called as a witness for the plaintiff, testified in substance as follows:

I have been by Windy Point a good many times. In 1890, I think it was, my folks lived in Anderson Valley and we came by there real frequently, and I think it was that year when the (Malheur) lake receded and you could see the dead sagebrush and stubs sticking up where the cattle would tramp on it. I know where the old well was at Windy Point, and this sagebrush extended perhaps quarter of a mile, or farther from the well out toward the (Malheur) lake. I recall a sort of a little bank there near Windy Point, perhaps a foot or a foot and a half (R. 654) high, and some of this dead sagebrush was on this side of it, and some of it was on the other side. Of course, it depended upon how much cattle was in there and how much was tramped out. (R. 654–655.)

Cross-examination:

There were lots of sagebrush that grew between the bank near Windy Point and Windy Point; most of it was dead.

Mr. LILJEQVIST. And you said you saw some sagebrush or greasewood westerly of that bank that is out there a mile or so from the point?

A. Just the stubs, and it was dead.

Q. How far did it extend?

A. I don't know. Perhaps a mile or a quarter of a mile. (R. 660.)

It was all dead, and I do not know how long it had been there. The sagebrush to the east of that bank, between that (R. 660) bank and Windy Point, had apparently been killed by water.

Mr. LILJEQVIST. Q. Did you see the water between the bank that you referred to—there is a bank about a mile or over a mile out west of Windy Point, a sand bank, a bank two feet high or so. Do you remember that bank?

A. Yes, sir.

Q. Now, did you ever see the water to the east of the bank—between that bank and Windy Point?

A. No, sir; I never did. (R. 661.)

Mr. LOUIS WOLDENBURG, called as a witness for the plaintiff, testified in substance as follows:

I never noticed any dead sagebrush around in the west end of Malheur Lake. (R. 753.)

Mr. WALTER B. PARKER, called as a witness for the plaintiff, testified in substance as follows:

I have seen dead greasewood around Malheur Lake all around the border, as far as that is concerned; that is, on the north and west sides and on the south side partly. (R. 871.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, testified in substance as follows:

At the time that I am speaking of when I watered my eight-horse team (in the summer of 1889, R. 1201), when I watered the horses right in the bed of the (Malheur) lake there, there was an acre, maybe, or more, of dead sagebrush, and while the horses were drinking, I was looking at the brush wondering how it came to be there. That brush was not a great distance from Pelican Island. I would not want to assume to say how far; it may have been quarter or half a mile. I do not know how far we crossed there. I imagined I could see water all the time, and I kept going until finally the horses found water. (R. 1202.) The dead sagebrush was at the approximate location of where I watered my horses; there was rather a low place there, and this dead sagebrush was all around there. That is, the trunks of the sagebrush. It wasn't the limbs. Just stubs sticking up—the body of the sage.

Mr. BLACKMAR. Q. How thick were those sage?

A. Quite a forest of it, like any bunch of sagebrush. It looked like it might be—you often see where sage has come up and by water has been killed. It generally comes in pretty thick to start with.

Q. I mean these sagebrush plants: How thick were they through?

A. An inch and a half or two inches. I would not undertake to say how thick. It was plain to see how it was.

Q. You have seen enough sagebrush so you know sagebrush when you see it?

A. Been raised with it. That is all I do know, sagebrush. (R. 1203.)

Mr. ARCHIE MCGOWAN, called as a witness for the plaintiff, testified in substance as follows:

I know sagebrush and greasewood when I see it.

Mr. BLACKMAR. Q. Have you ever seen any dead sagebrush or dead greasewood down in this (Malheur) lake? (R. 1562.)

A. I have seen a little. My attention has been called to it.

Q. And at what part of the lake would you see it?

A. Well, I have seen some in the vicinity of the Haley place. My attention has been called to it, and in the vicinity of Cole Island we were talking about that one time when we were down there, and some was discovered. I don't know whether I discovered it, or some of the other boys, but it was discovered there.

It seemed to me we found it west of Cole Island, but not very far, as we were not very far west. We were really on Cole Island doing a little shooting there, and we did not get out. We had a boat there at that time, but I do not remember using the boat myself much there. I would not undertake to say how far in feet it was west of where we were. (R. 1563.)

Mr. EDMUND J. MARTIN, called as a witness for the plaintiff, testified in substance as follows:

I have observed greasewood stumps in the neighborhood of Pelican Island. Those stumps that we observed and saw when we were there (in the spring of 1888 when hunting in a boat in the vicinity of Pelican Island, R. 1914–1916), were due east of Pelican Island, over toward Windy Point.

The water was shallow in there (east of Pelican Island); that was a shallow lake. It was not as deep as the other side. I could see those stumps (of greasewood); they were not floating. They were standing just like they grew there, in the mud, in the bottom of the lake. (R. 1918.)

Cross-examination:

I guess they (the greasewood stumps) were in the mud. They were at the bottom of the lake. There was water over the mud. (R. 1919.)

Mr. LILJEQVIST. Here is Windy Point over here. (Indicating to witness on map. Plaintiff's Exhibit 3.)

A. Well, they were growing out here, and this is where I saw them, and it was probably there. We were camped here. [Witness indicating on (same) map.]

SPECIAL MASTER. That doesn't mean anything in the record at all. (R. 1919.)

The greasewood that I saw down in the (Malheur) lake was east of Pelican Island; I could not tell you how many I saw there; there were numbers of them; the water was over them; there was just the stubs left; I could not tell you how long they had been there, or when they had grown there; it took quite a while for them to grow when they did grow (R. 1926); I could not tell you whether they were under water prior to the time that Oregon was admitted to the Union (R. 1921).

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

I have seen greasewood stumps north of my place, kind of a rabbit brush we called it. Goldenrod or rabbit brush. I have seen some

along the edge of the west side of Cole Island, and right directly north of the land I am living on now. There is some coming up now, growing there.

Mr. BLACKMAR. Q. What I was referring to was old greasewood stumps.

A. Yes, sir; old stumps were along there. I remember that I was trapping for muskrats and I run onto those stumps.

That was on the west line—on the west side of Cole Island right along the edge of the water, where the water just stood over it; I noticed that particularly, because the water was very clear, and the boat would just barely float over them when I was trying to set traps for the muskrats.

The old rabbit brush that I was speaking of was not down near my grain field, but right close to the patented land. They are growing all along from the very edge of the (Neal) meander line back to two or three hundred yards, or farther back right now, north of the (Neal) meander line in the unsurveyed land. (R. 2077.) I am speaking of the new plants that are coming up now. (R. 2077–2078.)

I have seen the old plants in there. A good many years ago there were old plants in there—old stumps of sagebrush. It was a kind of a rabbit brush, of course, when I say sagebrush, it all sounds alike to me; that is rabbit brush and sagebrush, but not greasewood. Greasewood is another kind of a plant.

That rabbit brush has been coming up on there now for the last four or five years, just a little bit of it growing up. But in 1890 and 1891 I remember some stumps along the west side of that Cole Island, but I have not (R. 2078) seen any in the last 10 or 15 years where I have been along there. That is, I mean in the water.

I do not know how many years it takes for rabbit brush to get started on dry land. I do not think that rabbit brush would start to grow in one dry year. I think it takes a good many years for it to get started.

The rabbit brush that I saw down there I think appeared to be old stumps; they must have been growing a good long time before they were drowned out. (R. 2079.)

Cross-examination:

The old stumps that I saw that were dead must have been farther than a couple of hundred yards from the Neal (meander) line; the old ones that were dead that were under water, they must have been farther than that. (R. 2079.)

I noticed them in different places along that edge of the (Malheur) lake that were washed up on Cole Island from where I live, extending on around as far as where the old chimney is, where Cole built a house on Cole Island a good many years ago. They were along the edge of Cole Island out in the water, where the water was shallow. I do not know how many years they had been dead, or how many

they had been covered with water. They were covered with water all of the years that I saw them.

I first went there (Malheur Lake) in 1888. (R. 2080.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. In doing that discing this year, did you see any evidences there of dead vegetation; and if so, what kind of vegetation had it been?

A. Well, there were tule roots and grasses.

There were tule roots, some grass and vegetation; weeds and hardy stuff that grows naturally there on the (Malheur) lake beds. The tule roots were partly on top (surface) of the ground, and partly submerged; the grass was on top of the ground. I can not say that I saw any evidence of grass deeper down after I had disked (the ground).

I did not see any evidence of old willow roots just right there; but there are quite a number on the east part of my place that I have fenced. (R. 2104.) I have seen them; there was a green willow that grew there about three years ago, but I do not think there are any growing there now. (R. 2105.)

Mr. JOE ORMAND AUSMUS, called as a witness for the plaintiff, testified in substance as follows:

In discing that ground I observed evidence of old vegetation; we found it more or less soddy in places. In some place there was an old sod and tule root. (R. 2130.)

The tules that we turned over with our disc were not long tules; they were old tule roots; very old. Where we found them they seemed to be just a solid mat of tules, and they seemed to cover a considerable area of the bed of the (Malheur) lake. (R. 2131).

Mr. WM. HENRY MCKENZIE, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Have you ever seen any greasewood stumps in that part of the (Malheur) lake, or at any place between there and the Narrows growing down where the water has been from time to time?

A. Yes. When we first came there, there were greasewood stubs out in the (Malheur) lake.

Those greasewood stumps were located on what we call the Taylor Ridge.

I do not know whether or not you have it marked that way on the map (Plaintiff's Exhibit 3); it is east of my father's old place there (the Alexander McKenzie place). I know where Red Campbell's place is located. (R. 2149.) The Taylor Ridge would be west of Campbell's place, but I do not know just exactly how far. It was east of my father's place and west of Campbell's place.

(Mr. PECORE. Mr. Campbell's place is shown on this map (Plaintiff's Exhibit 3) as "Campbell," and it is about a mile south of the northeast corner of section 17, T. 26 S., R. 32 E. His (Wm. Henry McKenzie) father's house is shown here (on the map, Plaintiff's Exhibit 3) as "A. McKenzie," and it is in the west half of the northeast quarter of section 26, T. 26 S., R. 31 E.)

The WITNESS. I cannot locate it exactly, but it is between those two holdings. (R. 2150.)

j. Comparisons

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

We do not get as much grass down there (in Malheur Lake) as they used to get forty years ago. They have not had a crop there the last year or two like in a wet year such as 1922 and 1923. The reason is it does not seem as heavy on the ground some way. It does not grow. (R. 283.)

Mr. JOSEPH WILLIAM CLARK, called as a witness for the plaintiff, testified in substance as follows:

I do not think that the tules that I saw in 1888 or 1889 in that area west of Saddle Butte to about the south of Lawen (R. 1024) are there to-day; it has been pretty well cleaned out. (R. 1025.)

7. Sloughs

a. In general

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

There are sloughs that run through Pelican Island, one of them about four inches on the map, Plaintiff's Exhibit No. 3, north of a well at the southern terminus of the Island. (R. 91.)

Mr. ROBERT IRVING, called as a witness for the plaintiff, testified in substance as follows:

I have no information as to how those sloughs are formed in Malheur Lake. They were there according to my earliest recollection of them. (R. 439.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I have seen fellows break through the ice with their horses. It would be mostly in the sloughs. (R. 503.)

I cannot state how far the water would come up on their horses. I have seen some of those sloughs that you could swim a horse in. (R. 503–504.)

Cross-examination:

There are several sloughs in there, but I do not know how wide they are.

Mr. LILJEQVIST. Q. Weren't there a lot of channels of open water in the western part of the lake?

A. Not all the time, because they were frozen over; but when they were not frozen, there was open water between the tules.

In the early days, there was a well-defined open water.

Mr. LILJEQVIST. Q. Was there well-defined open water from the open water of the lake down toward the tules at the Narrows in the early days?

A. Yes, sir.

There was a main channel that ran plumb through to Mud Lake. (R. 526.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There were sloughs that ran out from the tules in Malheur Lake; and I would have to guess how far out they extended; I suppose on the north side there were some out probably a mile from the edge. (R. 546–547.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

That part of Malhuer Lake that I was on in a boat was all shallow water, except in the channels, and they were not very deep. (R. 632.)

Mr. GRANT THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

I should naturally suppose the water, seeking its level, would naturally form those sloughs that we spoke about a few minutes ago. I don't know how else to explain it. (R. 713.)

Cross-examination:

The sloughs that I have referred to and that I have in mind run in from the the north of Malheur Lake, you might say. They are up on deeded lands. (R. 722.)

Mr. LILJEQVIST. Q. There are channels and sloughs that lead out from the Red "S" Field from the Silvies River?

A. Yes; and after you get beyond the Red "S" Field down in the Lawen settlement, there are still sloughs. (R. 724.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I am familiar with the Nine Mile Slough (R. 739) but I never saw the water from Malheur Lake back up into that slough. At certain times of the year the Nine Mile Slough had dead water in it. (R. 740.)

Mr. MARION HORTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There are a few channels through the western part of Malheur Lake. The first time I saw the water with reference to the bank at Windy Point, it was around close to the bottom of that bank. (R. 1473–1474.)

Mr. JOHN EDWARD LOGAN, called as a witness for the plaintiff, testified in substance as follows:

In 1887 or 1888, when we went in a boat which was in the Silvies River, near what is known as the Adam George place, we went out so that we were on the (Malheur) lake; you could see out on the lake (R. 1476); we did not go into the (Malheur) lake very far because it was a hard matter to get back, to get your channel to go back where you went out. We would just go down this channel, and we were hunting; we would probably go down a ways and find a tule nest or a bank of tules; one or two of us got on it, and the other fellows drifted around; there were channels and tules all through that country; in those days there were not any banks, everything was tules only right on the river, and we kept along these tules and never got much outside of the tules. We got far enough out in the tules so that we could see the open water in the center of the lake. After we got out of the channel, as I remember it, it was all tules for a long ways out, and you would work out through there and maybe some would be more on a channel than others; that is, more defined channels than others. (R. 1477.)

I can not recall the depth of the water there; I never measured it for any purpose to find out; I know we would always find the bottom with an oar; possibly two or three feet; enough to float our boat; I do not recall any occasion of getting out and pulling it along. (R. 1478.)

I remember once we did get out on the (Malheur) lake and the channels seemed to be more defined; we got clear out to the open water (in the boat) but I never did row clear across the lake. (R. 1479.)

Cross-examination:

Mr. LILJEQVIST. Q. Going down in there, there were hundreds of channels, weren't there, in that country?

A. No, there wasn't.

Q. Didn't strangers or fellows who were not familiar with it tie white rags up on top of the tules in innumerable places in that lake to be sure to find their way back and not get in the wrong channel?

A. I don't know.

Q. You never did that yourself?

A. No. (R. 1482.)

Q. Did you ever go in from the Springer side?

A. Never did; not in the (Malheur) lake.

Q. The channels you did follow, you found other channels leading off around the tules?

A. I tried to describe they were not channels, but just bunches of tules. As I recall it, there was a channel where the (Silvies) river ran into the lake from the north. We were there in the spring when the water was up. After you got out of this channel that defined the river you would get into bunches of tules, and you would look off here and think it is tules and a channel, and then tules, and you couldn't tell which was which. (R. 1483.)

Mr. ARCHIE MCGOWAN, called as a witness for the plaintiff, testified in substance as follows:

In the west part of Malheur Lake, where the Haleys, Campbell, Graves, Creason, Griffin, and some gentleman by the name of Berry, who had a homestead on the meander line just adjoining Graves; between Graves—well, I think it is what is the meander line of the (Malheur) lake at the present time, I did not notice much current, any particular current. I think I have seen a little current in what we call the main channel. I do not want to testify the general direction in which it moved, as I am not sure about that current. I can locate that channel, though, as I followed it out quite a ways on one occasion; it is that very channel that is right there by the Berry homestead. (R. 1558.) It is adjoining the Graves place on the south.

(NOTE.—The only improvements we show down near Scott Haley's at all were a couple of houses away back a couple of miles northwest. There are no houses left on the meander line until you get away down to the McKenzie house.—Pecore. R. 1559.)

The WITNESS. Scott Haley's home is on the deeded land and he is still living in the same place. This Berry cabin, on the Berry place, was, I would say, almost due west of that house, about a mile and a half, as near as I can identify it.

(NOTE.—That would put it somewhere near the center of the north boundary of section 13, T. 26 S., R. 31 E., north of the lake.—Pecore. R. 1560.)

The WITNESS. The channel was south of that place. There was a channel there that was fairly deep; that was the deepest water I knew of around there. It was right near the Creason house, that channel was; and from the Haley house it would be west by a little south and a little over a half a mile where you would strike that channel, the channel I have reference to.

That channel I presume was eighty feet wide. It wound around through the tules. (R. 1560.)

The channel was deep, and I could not wade it with hip boots, sporting boots, that I had on. (R. 1561.)

Mr. WILLIAM DAVID HUFFMAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Is there any channel that goes through this land (the Joe Hill or Huffman land)?

A. Yes. It is like a network of channels and sloughs. (R. 1585.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

At the time I tried to come down Malheur Lake in a boat towards the Narrows, when I attempted to find the channel, I got in innumerable sloughs that petered out; and if there was an open waterway, I did not find it. I do not remember what year that was. (R. 1630.)

Mr. JAMES A. TURNER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There is a slough on the east side of the Ausmus place that went out toward Otley's; I never knew the name of it; it never had any name when I was there that I know of. (R. 1731.) The water of the (Malheur) lake backed into that slough. (R. 1732.)

Mr. ALVIN C. SPURLOCK, called as a witness for the plaintiff, testified in substance as follows:

There is a kind of a slough (at my brother's homestead), but the (Malheur) lake has no bank there. (R. 1755.)

Mr. CHARLES E. DILLMAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been out there (Malheur Lake) in the springtime and in the summer, around the north side—around between the sloughs. By the north side I mean north and east of where my homestead was and out toward the Haley place, the Griffin place, and the Hill place. There were a lot of sloughs through there; some of those sloughs would be small and then you might find one where it would open up and be quite a little body of water. I do not know how deep those sloughs were. (R. 1866.)

In the springtime the water came up on to my deeded land through a slough on the south side. (R. 1868.)

Redirect examination:

The water when it came up there some years would get higher than other years. Out of the 160 acres, I would generally have probably 120 acres of water, and 40 not. I had a house on that place. (R. 1869.)

Mr. CLARENCE W. DRINKWATER, called as a witness for the plaintiff on cross-examination testified in substance as follows:

Right along pretty close to the west side of my father's place (the south line of which was the north line of the Clarence W. Drinkwater place) there was a low place, or what we call a slough, and the backwater of the (Malheur) lake came around toward the Lawen section; I just (R. 1880) do not recall where it went; but the water came down through there and then out into those tules, and then the water on the east side I think backed in from the lake. (R. 1881.)

Mr. JEFF CAWLFIELD, called as a witness for the plaintiff, testified in substance as follows:

The water on the Reinemann place comes from both ways (from the Blitzen River and from the Malheur Lake); it comes through the Curtis place, through the sloughs and runs on the Reinemann place, and some water backs in there too.

Mr. BLACKMAN. Q. Where this water comes from the Blitzen River and sweeps over that property does it sometimes gouge out kind of a slough?

A. Oh, no; there is just natural sloughs in there, but it won't wash out any. There is not enough current. (R. 1889.)

Some years the water recedes, it goes out; it does not run out; it gradually moves out. (R. 1890.)

Mr. EDMUND J. MARTIN, called as a witness for the plaintiff, testified in substance as follows:

In the spring of 1888, it must have been as early as March (R. 1921), when I went hunting in a boat in the vicinity of Pelican Island (R. 1914–1916), there was a deep slough there across which we swam the cattle. (R. 1917.)

Mrs. MARY GRIFFIN, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

There were some small sloughs through the (Gerald Griffin homestead) ranch. (R. 1936.)

Mr. JOHN W. HEINZ, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There are quite a few channels out there (west of the west fork of the Silvies River) running out from (to) the (Malheur) lake. (R. 1946.)

We hardly had any trouble with the boat. What caused the trouble with the boat was the wind. The wind would blow the water away, and we would have little raises to go over in places. The water would drift away with the wind and leave those places shallow.

Mr. LILJEQVIST. Q. In the fall of the year where you went with your boat, how deep ordinarily was it, except where you struck these shallow places?

A. Oh, that averaged—it was a whole lot different in places.

Q. Give your best judgment and recollection of it.

A. That would average from—oh, I couldn't hardly tell you. When we went down the big channel, when we first started to trap in that channel, I suppose it was seven or eight feet deep.

The Nine Mile Slough does go into Malheur Slough, but this was not at Malheur Slough. Where the big channel was was what they call the mouth of the Silvies River; then we would go out on the (Malheur) lake and the lake was not so deep. I do not suppose the (Malheur) lake had from three to four inches of water in it. (R. 1948.)

Mr. JOHN G. DARSEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Now, here is the Malheur Slough, which is shown on the map (Plaintiff's Exhibit 3) in section 10. (Indicating to witness on map.)

A. Yes.

Q. Down to township 25 south, range 33 east. And here is Pelican Island in the same township and range—I mean Pelican Peninsula. [Indicating to witness on map.]

A. Yes. (R. 1964.)

Q. And below that is what you called the slough.

A. Yes. We always called it the cut.

That cut or slough was quite a deep channel at times. It was mid-side to a horse; I have heard several say they swam a horse across there, but I never did. (R. 1965.)

We did not hunt as much on the other side (south side of Malheur Lake) as along on the north side (of Malheur Lake). We went perhaps a little past the Silvies River. I would not say for sure how far we did go; I don't know.

We found channels going through the tules; there were several of them; a person could get lost in there pretty easy by taking the wrong channel with a boat; I will venture to say that there were five or six channels in there; you might call it a channel, but it was just places through the tules where it would lead in. (R. 1967.)

Redirect examination:

The only shack I saw down there in Malheur Lake was Archie Gibson's shack right at the edge; in the early spring the water ran around there and we called it an island, because there was a slough that ran down there and cut his cabin off from the mainland; but in the fall of the year, it was dry out to his cabin, there was a good road out there.

I do not know where Archie Gibson's place was located; I should judge it was maybe a mile south of Saddle Butte; that is the only way I could describe it; I do not know the numbers of it; I would not say exactly a mile, but about that. (R. 1968.)

Mr. W. SCOTT HALEY, called as a witness for the plaintiff, testified in substance as follows:

There were only probably about 200 acres of my 400-acre place which was hay crop; the balance was in a pond and slough, or a channel which we called it, that led off toward the Narrows. (R. 1989.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, testified in substance as follows:

There are a few sloughs on my deeded land. (R. 2107.)

Mr. JOE ORMAND AUSMUS, called as a witness for the plaintiff, on recross-examination testified in substance as follows:

There is a little slough that cuts Cane Island off when the water is high; just a little slough.

Mr. LILJEQVIST. Q. Isn't it a fact people have gone across that entire area in a boat from Cane Island to the channel since you have been there?

A. I think that was during the flood season when the water was coming from above.

The spring and the early summer is the flood season; it lasts perhaps two or three months. (R. 2138.)

Mr. LILJEQVIST. Q. During these years that you have been out there on Pelican Island, the peninsula?

A. Yes, sir.

Q. Have you found times of the year where there was water between the channel of the peninsula and the island itself?

A. I rode out there on horseback in summer—in the early summer. We found water in that channel. We would ride a little to one side of the channel, and there it was not deep; we rode there to avoid the deeper parts of the channel; there is a hole scooped out between the (Pelican) Island and the land, and we went a little to one side of this channel. (R. 2139.)

Mr. JAMES G. BUNYARD, called as a witness for the plaintiff, testified in substance as follows:

There were sloughs running through the (John) Marshall place, and down onto our (Malheur) lake land; I could not say that this water (of Malheur Lake) backed up there. The water in the sloughs was generally always moving toward the (Malheur) lake. (R. 2166.)

Mr. HENRY OTLEY, called as a witness for the plaintiff, testified in substance as follows:

There are some sloughs that run through my place (the Henry Otley place) up there (R. 2208–2209); they run clear down to the (Lake Malheur) Bird Reserve. (R. 2209.)

(No cross-examination.)

Mr. JOHN MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

There were some sloughs or low places leading across my place down toward the (Malheur) lake. (R. 2233.)

Some of those sloughs on my place probably would run off down into the lower ground, probably into a swamp-like, and eventually go down. You could not tell whether they were running much or not. (R. 2234.)

8. Banks

a. With reference to the Neal Meander Line of 1895

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

Beginning at the northwest end of what is indicated on Plaintiff's Exhibit No. 3 as Windy Point (near the old Haastrich house and the old cemetery, both indicated on that map), on the north and south center line of section 11, T. 26 S., R. 33 E., about half way between the center of the north boundary of the section (the point where we were yesterday on the trip of inspection) a little more than a mile west of Windy Point, there is a bank about three feet high, extending southerly for about a mile and a quarter; that bank is one-third of the way in from the Neal meander line to the original meander line of 1877, or, in lineal feet from the Neal meander line, about 10 chains, or 600 feet, would be an average distance. (R. 102.) That bank extends south, or in a southerly direction to about the center of the southeast quarter of section 15, T. 26 S., R. 33 E., and then it just disappears. (R. 102–103.)

The ground from section 15 westerly for about a mile is practically level. There is a gradual slope to the northeast, hardly determinable without the aid of surveying instruments. There is nothing out there that forms a steep bank at all. That condition continues west for about a mile.

Then somewhere near the Neal meander line, sometimes a few hundred feet behind it, and sometimes in front of it a few hundred feet, over to the meander corner of sections 17 and 18, T. 26 S., R. 33 E., there is something you might call a bank, not well defined, but a gradual slope with a change in elevation of about two feet in an average horizontal distance of approximately 600 feet; there is a slope there, but it is very, very gradual.

Beginning at the meander corner of sections 13 and 18, T. 26 S., Rs. 32 and 33 E., south of the lake, is a very low sloping bank, having an average height of about two feet and probably an average distance horizontally of 150 feet down to about (R. 103) the meander corner of sections 31 and 32, T. 26 S., R. 32 E., south of the lake.

From that meander corner of sections 31 and 32, T. 26 S., R. 32 E., down westerly to a point on the north boundary of lot 11 of section 25, T. 26 S., R. 30 E., there is not any bank; there is a series of little bumps in there but no well-defined bank extending for any appreciable distance between those two points, and the meander line is roughly about 8½ miles in distance.

From that point in lot 11, section 25, T. 26 S., R. 30 E., south of Malheur Lake, down to the Narrows, there is a pretty well defined sloping bank that the meander line follows at a mean elevation.

Coming back on the north side of Malheur Lake, there is a bank in section 26, T. 26 S., R. 31 E., north of the lake, extending in a general northeasterly direction over to about the line between sections 25 and 26 of T. 26 S., R. 31 E.

From that point following the meander line northerly there is not any bank at all for a distance of approximately a mile along the meander line. In lot 2, section 23, T. 26 S., R. 31 E., we hit the southerly bank of an island (R. 104) that rises about seven or eight feet above the elevation of the meander line, and that line follows the side of the island toward the lake along the northern end between the lines of sections 23 and 24.

Just a short distance northwest of the end of that line it jumps across a slough and picks up the bank of another island that is not quite so well defined, and it follows that along to lot 5 in section 13, T. 26 S., R. 31 E.

From that last named point the Neal meander line follows a fairly well defined bank and reasonably close to it; it jumps up and down, and leaves it, and goes below it and above it a little, a couple of hundred feet in places, but it follows reasonably close to a pretty well defined bank until you get over into lot 3, section 17, T. 26 S., R. 32 E., north of the lake. From a point in lot 3, section 17, T. 26 S., R. 32 E., north of the lake over to about the southern terminus of the line between lots 2 and 3 of section 9 of the same township, the meander line does not follow a bank because there is not any bank there for it to follow; there are slopes in the ground but no continuous well defined bank. It is slightly similar to the condition on the south boundary.

From section 9, T. 26 S., R. 32 E., north of the lake, on for a distance by meander line of a mile or mile and a half over to the eastern meander corner of sections 4 and 9, same township, Neal does follow a bank with his meander line.

Then he loses the bank again, or quits following it for a distance of perhaps a mile (R. 105), or to about the west boundary of lot 11, T. 26 S., R. 32 E.

In lot 11, section 3, T. 26 S., R. 32 E., north of the lake, he again picks up the bank and follows it up to the north boundary of lot 9, section 3, of that township.

Then he loses it again and jumps across a bunch of sloughs, islands, and low spots for nearly two and a half miles by meander line (it is not anywhere near that far straight across), over to about the west boundary of lot 1, section 2, T. 26 S., R. 32 E.

From the west boundary of lot 1, section 2, T. 26 S., R. 32 E., he then follows a pretty well defined bank over to about the west boundary of lot 2, section 36, T. 25 S., R. 32 E., north of the lake.

From the west boundary of lot 2, section 36, T. 25 S., R. 32 E., north of the lake, he loses his bank, and it can not be said that there is any bank for him to follow until he gets practically over to the

line between T. 25 S., Rs. 32½ and 33 E. There may be little stretches in there where it looks as if the meander is following a bank, but there is not any continuous bank for him to follow. My contours show there is no bank there. There are little stretches of banks but nothing to indicate a continuous bank of a body of water.

Beginning at approximately T. 25 S., Rs. 32½ and 33 E., there is a pretty well-defined bank generally down to the place where we began west of Windy Point. There are a couple of places in there where Neal departs from that bank quite a ways. (R. 106.)

In sections 20 and 29, T. 25 S., R. 33 E., he has departed from it (a bank) three-eighths of a mile, approximately.

Over near the corner of sections 27, 28, 33, and 34, T. 25 S., R. 33 E., he has departed from that bank nearly three-quarters of a mile to the north, and three-eighths of a mile to the east and he follows down on an average distance of about one-quarter of a mile west of a bank from about the center of section 34, T. 25 S., R. 33 E., to a point opposite Windy Point where we began our description. (R. 107.)

Mr. COREY E. SMYTH, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. There wasn't any bank in there (at the Neal meander line on his father's place) of any kind, was there?

A. No, sir. (R. 1526.)

Mr. JOHN J. HEINZ, called as a witness for the plaintiff, testified in substance as follows:

There was no kind of a bank near my place where the Neal meander line was run; there is a little higher place, but no bank. (R. 1682.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff testified in substance as follows:

On my place (the Ralph Catterson place) where I ran the fence down into the (Lake Malheur) Bird Reserve, there is no bank there that would point out the Neal meander line. (R. 1706–1707.) It is very flat there, as close to the lake as it is. (R. 1707.)

Mr. JAMES A. TURNER, called as a witness for the plaintiff, testified in substance as follows:

For a mile to the north of my place there was nothing there that indicated a lake bank. The land lying to the north of my place was level, and there was no bank at all. (R. 1722.)

Mr. ALVIN C. SPURLOCK, called as a witness for the plaintiff, testified in substance as follows:

There is a kind of a slough (at my brother's homestead), but the lake has no bank there. (R. 1755.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, testified in substance as follows:

In connection with my duties, it is part of my work to observe plants and trees; woody shrubs and trees have come under my instructions, and to report them in various districts. (R. 1999.)

If my memory serves me right, the posts placed by the Government (indicating the boundaries of the Lake Malheur Bird Reserve) on the south side of (Malheur Lake), have been placed off and on at different periods from 1912; but when the work was finished, I could not say. I am not so familiar with the posting on the north side (of Malheur Lake).

On the south side of Malheur Lake, I have not observed any bank whatever which would mark the limits of the (Malheur) lake.

Over on the east side around Windy Point, I have seen a small bank there from possibly 18 inches high down to a featheredge. (R. 2000.)

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

At the time Mr. Neal ran that meander line there was no bank of the (Malheur) lake at that point (north of my place). (R. 2020.)

Mr. JOSEPH KADO, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

There is no bank along that part of my property (about a mile) (R. 2049) which is bounded by the (Neal) meander line. (R. 2051.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

There is no bank at all where the Neal meander line passes across my property. It is very level, and you can not tell any difference in the land at all. (R. 2068.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, testified in substance as follows:

I know about where the Neal meander line is up there near my property, there are stakes there.

Mr. BLACKMAR. Q. Is there any lake bank there in the immediate vicinity of the Neal meander line on your property?

A. Well, not that I would call a bank; no.

The land up by my deeded land is practically flat; there are some knolls, as they call them, running through. (R. 2106.)

Mr. JOE ORMAND AUSMUS, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

There is a bank on the south side of Cane Island, that I would call the (Malheur) lake bank. (R. 2137.) There is a ridge (there) that extends for a considerable distance, and it looks very much like a lake bank.

Up north of there, where the Neal meander line is there is no bank that I know of. (R. 2138.)

Mr. JAMES G. BUNYARD, called as a witness for the plaintiff, testified in substance as follows:

I never noticed any bank there between my property (the Bunyard Ranch—now the Hill Brothers Ranch) and Mr. John Marshall's property. (R. 2165.)

Mr. HENRY OTLEY, called as a witness for the plaintiff, testified in substance as follows:

I have knowledge of the location of what is called the Neal meander line. There is no bank up there along the Neal meander line across the Otley properties. (R. 2212.)

That property (the Otley properties) down across the Neal meander line has not much of a slope to it. (R. 2214.) It is characteristic of those lands (the Otley properties) in that part of the (Malheur) lake, that there is not much run-off to them. There has always been more or less tules which stop any fast run-off.

There are not many tules above the Neal meander line; a few in the deep sloughs. Most of the tules above the Neal meander line have been cut off. In the improvement of that property (the Otley properties) in the (Lake Malheur) Bird Reserve we have cut tules down in there from time to time, and other settlers in there have done the same thing. (R. 2215.)

(No cross-examination.)

Mr. JOHN MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

Mr. Neal ran his meander line through there (my property) years before I owned any property there. I filed on this property in 1902. At that time I became acquainted with the approximate location of the meander line.

There was no bank along where I had my property on that (Malheur) lake, where I worked; there was never a bank there any place. There was some slope, but then so gradual that we could not tell it. It all looked about level to us. (R. 2234.)

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified on cross-examination in substance as follows:

In one spot on the east side of Malheur Lake, the Neal meander line is about a quarter of a mile from the bank. (R. 2268.)

Mr. ALPHENA VENATOR, called as a witness for the plaintiff, testified in substance as follows:

In 1898, I owned a piece of property up near the Otley place. I had the Jordan ranch leased. I had the Jordan ranches, but I do not know just the year. I had the Jordan, the Spurlock, the J. O. Hendricks, the Armack, and clear all around the (Malheur) lake:

then I skipped the Graves (place) and I crossed the channel then over on to the other (south) side; but in later years—I cannot place the year—I had the Bill Marshall place, and other places over on the channel. (R. 2322.)

During the time that I lived up there, I became acquainted with the approximate location of the Neal meander line; quite a portion of it on the north side of the (Malheur) lake, probably four or five miles. During the time that I was up there, I did not observe a bank along the Neal meander line. There was no bank. The ground above the Neal meander line and below it is flat except for the islands and ridges; there are some islands and ridges—you might say not islands, but ridges. (R. 2323.)

b. With reference to the Meander Line of 1877

Mr. Chester W. Pecore, called as a witness for plaintiff, testified in substance as follows:

Beginning at the same point where we began describing the Neal line; namely, about one-third of a mile east of Saddle Butte the 1877 meander line does not follow a very well defined bank; there is nothing much that might be called a bank.

There is a rise of two feet in a horizontal distance of a quarter of a mile, beginning at the south (R. 108) line of section 10, T. 26 S., R. 33 E., and running south to about the line between sections 22 and 23, T. 26 S., R. 33 E., with some semblance of a bank fairly close to the old meander line.

From the lines between sections 22 and 23, T. 26 S., R. 33 E., and running westerly along the meander line through T. 26 S., R. 33 E. there is no well defined steep bank; there is a gradual slope, steeper than along the Neal meander line, but there is not anything along that meander line through the remainder of T. 26 S., R. 33 E., that could be classified as a bank; there is a slope there following somewhere near an equal elevation across there, but no well defined bank through the township.

Then through T. 26 S., R. 32 E., over to about the western boundary of lot 6, section 23, T. 26 S., R. 32 E., there is no bank.

Beginning in lot 6, section 23, same township, and following along to about the northern end of the east boundary of lot 2, section 4, T. 27 S., R. 32 E., there is a more or less well defined bank, and the meander line follows within a couple of hundred yards of it, one way or the other; some places it follows quite close to it; at other places it varies from it up to about two hundred yards.

From the northern end of the east boundary of lot 2, section 4, T. 27 S., R. 32 E., there is not any bank along the meander line for a matter of about a mile.

We pick up a bank over near the end of west center line of section 5, T. 27 S., R. 32 E., following somewhere near it until we get to about the southeast corner of (R. 109) lot 3, section 31, T. 26 S., R. 32 E.

Then he loses his bank for about half a mile.

Then he picks it up again along about the west boundary of lot 5, section 36 T. 26 S., R. 31 E., south of the lake, following it fairly well to the Sodhouse Spring, in the vicinity of lot 6, section 35, T. 26 S., R. 31 E.

From the Sodhouse Spring westerly to about the line between sections 29 and 32, T. 26 S., R. 31 E., there is no well-defined bank.

From the line between sections 29 and 32, T. 26 S., R. 31 E., he picks up a bank—rather follows along a fairly steep slope, until he gets to the Narrows.

No meander lines were run in T. 26 S., R. 31 E., north of Malheur Lake as originally surveyed by H. C. Perkins in 1879; the survey stopped at the line of legal subdivision and no attempt was made in that township to meander Malheur Lake.

We have extended our topographic surveys to the old meander line in section 7, but from the east boundary of section 7 to the northeast corner of section 4, the meander line just cut across the country; there is no substantial difference between the land on one side of it and the land on the other; it is a rolling, more or less hilly, land with changes in elevation, as much as six feet in a comparatively short distance in places; but there is no bank there; there is (R. 110) just a bunch of hills. The same may pretty nearly be said of the 1877 meander line through T. 25 S., R. 32 E. The same is also true of it from the west boundary of T. 25 S., R. 32½ E., to the quarter section corner of sections 15 and 22, same township; there is no well defined bank that that meander line follows along; there are changes in elevation, but no continuous well defined bank for it to follow.

From the quarter corner of sections 15 and 22, east of the east boundary of T. 25 S., R. 32½ E., we have not extended our plane table surveys to the old meander line; we did not have time. From the last named township line, around to Windy Point, with the exception of about one mile over in sections 27 and 28, T. 25 S., R. 33 E., there is an unmistakably well-defined bank that has perhaps an average height of about two feet; and the 1875 meander line in that particular township with one exception as noted in sections 27 and 28, seems to do a remarkably good job of following that bank. (R. 111.)

There is one modification I should make, and that is near the northwestern corner of lot 4, section 3, T. 26 S., R. 33 E., where he departs from the bank he had been following to that point, and runs a little more than a quarter of a mile east of it and parallel to it, down to a point opposite Windy Point.

That takes us back to the point of beginning. (R.112.)

c. In the early days

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

There is no bank that I know of along the north side of Malheur Lake in the Lawen district at all, it is just a gradual slope out.

There is no pronounced bank on the north side of Malheur Lake. (R. 197.)

Mr. Tobias Stilley Riddle, called as a witness for the plaintiff, testified in substance as follows:

I have seen the east end of Malheur Lake and there is not much of a shore line down there; it is spread out. (R. 541.)

Mr. Campbell C. Kilburn, called as a witness for the plaintiff, testified in substance as follows:

I do not think there are any banks that show where Malheur Lake is now; there are banks around the border of the old lake bed, but where the water is now I do not think there are any banks. Around on the northeastern part of Malheur Lake there are some banks; farther to the right toward the east there is a bank, and possibly a little around on the southeast, or possibly (R. 736) the south. As to the rest of the lake I don't think there is any bank. (R. 737.)

Mr. William J. Dunn, called as a witness for the plaintiff, testified in substance as follows:

Malheur Lake around my place (in section 34, T. 26 S., R. 31 E., south of the lake) has a gradual slope to it, and there is no well defined bank there. (R. 823.)

Mr. James M. Brandon, called as a witness for the plaintiff, testified in substance as follows:

I have not seen a bank on the north or south shores of Malheur Lake and I worked cattle there a good many years. It is pretty hard to tell where the lake begins and where the land ends. (R. 970.)

Mr. Marcellus B. Hayes, called as a witness for the plaintiff, testified in substance as follows:

On that north part of Malheur Lake there are no banks there. (R. 1198.) Where the house is (on my place in the south portion of lot 3, section 36, T. 25 S., R. 32 E., north of the lake) there is a greasewood ridge. You get to the south portion of that ridge which runs kind of northeast and southwest and the land gradually slopes from there to the center of the lake. There is some high ground off a little, but you might say it is a uniform bottom. (R. 1199.)

d. 1870–1880

Mr. Alphena Venator, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There is no bank on the north (of Malheur Lake) near Wright's Point, and there never was. Malheur Lake was never near Wright's Point. Probably about nine or ten miles I guess south of Wright's Point there is a little lake we call Swan Lake, and there is a little bank on the east side of that lake. (R. 2327.)

c. 1880–1890

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

Around from Saddle Butte to Windy Point, there was a bank there before Malheur Lake broke through the Sand Reef into Harney Lake.

In going into the lake from the north side, during the ice period, there did not seem to be any jump-off at all. If there were any, it would be under the ice. I have never been in there after cattle when there was no ice. (R. 145.)

Mr. GRANT THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Have you been around this lake very much so that you can express an opinion from your observation as to whether or not this (Malheur) lake has any definite shoreline?

A. I have been around the lake quite a good deal; well you might say since along in the early nineties, and there are places where ridges kind of approach in towards the lake that you can see where it shows evidence of banks there; but several places, why there is just practically no shoreline.

Q. These places where you refer to, where there is a bank, how much of a bank do you mean in feet?

A. Well only just short places. (R. 705.)

Q. I mean the depth of the bank.

A. It would depend largely upon the height of the ridge that runs out towards the lake. In some places it is higher than others.

Q. What is the highest bank you have seen any place around that lake, and what is its location?

A. That is a pretty hard question to answer. There are sand reefs in there that are several feet high. Now, for instance, you take it in there in the vicinity of Windy Point, where the lake shore apparently goes out to the edge of the sage and along there, the bank might be a couple of feet high in places, probably due to dry periods when the sand would pile up there in the lake bed.

On the north side of Malheur Lake, just a little east of Saddle Butte, there are places there where the bank is two feet high anyway; and then on either side it just apparently disappears, and there is nothing to indicate that there is any lake shore there.

Mr. BLACKMAR. Q. As a matter of fact in a great many places on this lake there is no definite shoreline?

A. Yes, sir.

Q. That is, you mean there is no definite shoreline?

A. Yes, sir; I mean there is no definite shoreline (R. 706), as I would understand it (R. 707).

Mr. JOHN EDWARD LOGGAN, called as a witness for the plaintiff, testified in substance as follows:

In 1887 or 1888, when we went in a boat which was in the Silvies River near what is known as the Adam George place, we went out

so that we were on the (Malheur) lake; you could see out on the lake (R. 1476); we did not go into the (Malheur) lake very far because it was a hard matter to get back, to get your channel to go back where you went out. We would just go down in this channel, and we were hunting; we would probably go down a ways and find a tule nest or a bank of tules; one or two of us got on it, and the other fellows drifted around; there were channels and tules all through that country; in those days there was not any banks, everything was tules; only right on the river, and we kept along these tules and never got much outside the tules. (R. 1477.)

Mr. GEORGE MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

The Spring Branch has banks to it and that Spring Branch runs through my place; outside of the Spring Branch there is no lake bank there. (R. 1690.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, testified in substance as follows:

Many times I observed the bank there in the neighborhood of the Stauffer corral (near Windy Point); I observed it for a long term of years.

Now, in order not to mislead (R. 2180) you, or anyone else, I would like to state that down farther south that bank is extinguished, and there is no bank there; the salt grass approaches the water very closely, and it is just a gradual slope from the water level out toward the sagebrush. In other words, this bank does not extend along the entire east end of Malheur Lake. The bank fades out at the south extremity of the east side of the (Malheur) lake. (R. 2181.)

Mr. BLACKMAR. Q. Judge, except in the eastern part of the lake, which we have already referred to, is there a bank that you know of any place else around Malheur Lake?

A. There is a bank on Ted Dunn's place. Now, I couldn't give the length of that bank, but I think it is approximately half a mile, running approximately north and south. I had a cabin out on that same tract of land, now owned by Mr. Dunn, and lived there for a while, one summer, and I am quite familiar with that tract of land.

Q. Are those patented lands now?

A. I think Mr. Dunn has them patented. (R. 2186.)

But this cut bank extends from the vicinity of—well I will say perhaps half a mile south of the east extremity of what I would call Dunn Island; or it would be approximately the same distance south of the west extremity of Cole Island, and extending in a southerly direction along the west line of Ted Dunn's place; that is, it may not be the west extremity of his place. I don't know how the survey runs there, but it is part of that.

Mr. BLACKMAR. Can you locate that for us, Mr. Pecora, and give us the elevation?

Mr. PECORE. Yes, sir. The bank he has been describing I am sure commences just northwest of lot 4, of section 28, township 26 south, range 32 east, and extends in a southerly direction to a point near, or in the vicinity of the meander corner of sections 4 and 33, townships 26 and 27 south, range 32 east. Is that what you were describing, Judge? (R. 2187.)

A. That is correct, except in reference to the distance. Now, this cut bank, I don't think it would exceed one-half mile in length.

It did not extend the full distance as described by Mr. Pecore.

Mr. PECORE. The elevation at the base of it is between 92 (4,092) and 93 (4,093) feet; and the top of it is about 4,095 feet.

I do not recall any other cut banks around the (Malheur) lake of any kind whatsoever; just a gradual slope to the water. Some places it is so gradual that it is almost flat. Very nearly level, I would say. (R. 2188.)

f. 1890–1900

Mr. JOSEPH LOGAN SHIRK, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The bank that I referred to at Windy Point was somewhere between that place and Springer's. It seems to me that we had to swing to our left off the line of our travel to Windy Point. I think we camped some mile and a half or two miles in bringing the cattle around.

Mr. LILJEQVIST. Q. About a couple of miles east of Springer's?

A. No. We camped there, and then from that camp going to Windy Point, we swung in, but how far off the line, I couldn't say.

Q. There is a bank in from Windy Point about a mile west. Is that the bank you are talking about? (R. 944.)

A. No; that is not the bank I mean at all. I don't suppose to-day there would be any bank left there. It was a very small one then; very small.

It was somewhere in the southeasterly part of the lake, but I could not judge how far it was from Springer's, because we were driving the herd through there, and I had to keep other cattle out. But it was before we got to the easterly end of the (Malheur) lake and started north past Windy Point. I did not go out into the lake at the time I went with Mr. Oliver, we just went along the edge of the mud caused by the water having receded from where the elevation was; whether it was the edge of the lake, or the overflow of the Blitzen (River), I would not be able to say. (R. 945.)

Mr. ALVIN C. SPURLOCK, called as a witness for the plaintiff, testified in substance as follows:

I know where Mr. Ausmus is working at the present time, and where he has his property.

Mr. BLACKMAR. Q. In there near his property, do you remember any islands covered with greasewood, or islands with some greasewood on them?

A. No; I don't remember of greasewood on them. Take it south of his place there, there is some little salt grass ridge that runs along there that looks like it might have been the bank of a lake sometime. (R. 1758.)

It (the salt grass ridge) is about a mile and three-quarters or two miles, I should judge, south of the Ausmus place. (R. 1758–1759.)

Mr. CHARLES A. SPURLOCK, called as a witness for the plaintiff, testified in substance as follows:

There are some sloughs through my place (my homestead in sections 8 and 9, T. 25 S., R. 32½ E.) (R. 1764.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, testified in substance as follows:

There is a bank over on some of my land. On my homestead (his present house is right near the line between sections 6 and 31, T. 26 and 27 S., R. 31 E., south of the lake—Pecore) there is quite a bank along the (Malheur) lake for a ways; it must be around 2½ feet high in places, possibly a little more than that in some places, and under that in others, I suppose.

My land lays right around the (Malheur) lake, and this homestead is on the east side. (R. 1823.) I could not say whether the bank forms the boundary line of my property; I don't know; I don't think so; it is along the lake.

Mr. BLACKMAR. Q. Is the boundary line out farther towards the lake than the bank?

A. Yes; it is in places.

I could not tell you how far in feet it is out. (R. 1824.)

Mr. BLACKMAR. Q. Now, west of your place, down toward Harney Island (Harney Lake), is there any bank in there? You refer to a little bank on your place. Now, west of you is there any bank.

A. No; I don't remember any bank there.

Q. Up on the north side of the (Malheur) lake, the part that you are familiar with, around Doc. Graves' place, is there any bank up there?

A. I don't remember any bank in there. (R. 1831.)

Mr. LLOYD B. CULP, called as a witness for the plaintiff, testified in substance as follows:

I know pretty well the north side of Malheur Lake from the mouth of the Silvies River, on west. I do not believe I ever saw any bank there, only the main river that runs down there, the banks where it runs, that is all. It is hard to tell where the (Malheur) lake is there. You go through several miles of tules and you don't know when you are in the lake. I have seen the bank in a few places quite plain, along the lake where the waves washed up and it washed kind of a bank, quite prominent. (R. 1849.) That is right south of Ausmus'

where the main place is that I saw the bank. On west I never saw any bank. I suppose that bank was two or three miles south of the Ausmus place; about five or six miles south and east, mostly east of my place where I live. It is several miles.

That bank with reference to the Ausmus haystacks I believe is right south of them. He is just on the ridge with the haystacks—right up on the ridge, and I think the bank is south of the stacks. (R. 1850.)

Cross-examination:

Mr. LILJEQVIST. Q. Do you know where the Heinz place is and the Showen place is?

A. Yes.

Q. Which direction from that was this bank you are talking about?

A. Right east of that is the way I have got it.

Q. Do you know how far?

A. No. I judge a mile and a half, something like that. (R. 1854.)

Q. As a matter of fact, there was all kinds of open water between this so-called bank east of the Showen place and the meander line?

A. I don't know where the blame (Neal) meander line is; I can not tell you.

I do not know whether that bank was near the meander line or not; it is down there some place, I don't know exactly where it was. (R. 1855.)

g. 1900–1931

Mrs. OLLIE DARSEY, called as a witness for the plaintiff, testified in substance as follows:

There was no bank there on Clarence Carey's place, it was mostly a gradual slope. There might have been a bank perhaps of three or four inches, or perhaps six inches high, but that was half a mile from the house, I should say.

(NOTE.—Clarence Carey's place is the fractional south half of the southeast quarter; and the southeast quarter of the northeast quarter of section 24, T. 25 S., R. 32½ E.; and the fractional northwest quarter of the northwest quarter of section 19, T. 25 S., R. 33 E.—Pecore. R. 649.)

Mr. J. L. CAREY, called as a witness for the plaintiff, testified in substance as follows:

At that particular place where the Carey properties were there was no bank, just a gradual slope. (R. 797.)

Mr. D. H. SMYTH, Junior, called as a witness for the plaintiff, testified in substance as follows:

There are no lake banks I ever saw there (on the D. H. (Rye) Smyth place.) (R. 1466.)

Mr. ARCHIE McCLOWAN, called as a witness for the plaintiff, testified in substance as follows:

There is a defined bank around Pelican Island, and there is a defined bank right west of Windy Point.

Mr. BLACKMAR. Q. Now, take the other parts of the (Malheur) lake, over on the south side towards the west, and on the north side toward the west, do you find any defined bank in there?

A. I don't remember of any. (R. 1562.)

DR. LLEWELLYN EUGENE HUBBARD, called as a witness for the plaintiff, testified in substance as follows:

I have been around practically the entire shore line of Malheur Lake. (R. 1601.)

Beginning on the southeast corner, or side, of Malheur Lake, and a little to the south of Windy Point, about in that vicinity, would be a good starting point, and going to the north, the line (shore) was well defined at the time I came here; more so than it is now.

It is really well defined down toward Pelican Island, where that shore line comes against Pelican Island; and a narrows follow up around what most people would consider part of Pelican Island, although it is outside of the (Lake Malheur) Bird Reserve; so that there is a well defined (shore) line along there, sometimes six or eight inches, and sometimes as high as three feet.

From there on around the north side, clear down to the Narrows, and around Mud Lake, and around the south side of it, and up the south side of Malheur Lake, clear around to the starting point, I have never seen anything that would indicate to me a shore line of the lake, until I saw the posts put up there for Harney and Malheur Lakes. (R. 1602.)

9. Wind conditions

a. In early days

Mr. FRANK WHITING, called as a witness for the plaintiff, under re-direct examination testified in substance as follows:

I have noticed the waves beat against the shore of Malheur Lake wherever there was a bank; the waves would beat up there, the same as any other body of water, and it would beat it out—I would not say any particular distance. The land was perfectly level and it would run the water out more than where there was an abrupt bank. I have not seen the wind carry the water out two or three hundred yards, but it might have done it. (R. 210.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

I have observed the effect of winds on Malheur Lake. They generally come from the south and go north. Last year there was a little water in Malheur Lake, and the wind blew it out (R. 280) and it

never came back. The year before it did the same thing. If you were in a light boat and with not much in it, it would roll you like on the ocean, going up and down, bobbing like that with those waves, and just roll you and roll you. The wind would carry the water maybe half a mile, and maybe farther. We usually get those winds in April and May. (R. 281.)

Mr. ROBERT IRVING, called as a witness for the plaintiff, testified in substance as follows:

The wind has the effect of carrying the (Malheur) lake up toward Windy Point. With the wind blowing on it, it naturally creates these waves and they get up higher on these lands. When the wind would die down, the water would immediately recede unless it got into some of the sloughs, or something there, and it might stay for a while. (R. 440.)

Mr. GEORGE E. WHITING, called as a witness for the plaintiff, testified in substance as follows:

I have made a good many trips right by the east end of Malheur Lake, and passed the well at Windy Point. Windy Point derived its name because of the wind that blows there. (R. 558.) Our prevailing winds are from the northwest and that point is southeast of Malheur Lake. The winds had a considerable effect upon the water of the lake. I think the wind would carry the water up there about a quarter of a mile, and when the wind died down the water would recede. (R. 559.)

Mr. GRANT THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

I have seen the times when an extremely heavy wind would come up, and the waves of Malheur Lake would roll quite a bit, and in a level country it would spread the water out. There are places there that the wind might carry the water for a mile. It was practically level. When the wind dies down, the water recedes back, and now and then in a low depression some of it might stand there and it would evaporate. (R. 705.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, testified in substance as follows:

North of Pelican Island, north and northeast, Scott Haley's brother bought a piece of land there from Sitz. (R. 1205.) I do not remember the year. There is quite a bank there and some low places out from the bank, and Sitz told me just before Scott bought the property that he (Sitz) was going to put in some gates along there, and I am under the impression that he did. The wind coming from the south would blow the water from the low places, and he was going to put check gates in to hold the water out and to make hay out of the salt grass. I think he put in some gates, but I am not positive. Anyway, the wind coming from the south would

blow the water about a quarter of a mile; when the water was high there were breaks in the rim, when the water got back, you could take the edge of the river or stream and the bank is higher along the edge of the water than it is out a ways, and when the wind would die down the water would recede and go back into the (Malheur) lake. (R. 1206.)

Mr. ORIN EUGENE THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

I remember one time the wind blew the water out on his (Jim Mahon's) place quite a bit, and he put up some salt grass hay there. I am sure I could not say what year that was. (R. 1510.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

Mr. LILJEQVIST. Q. Now, do you remember the (Malheur) lake coming up to that point where the old house was, of your own recollection?

A. Oh, yes; I remember that. We had a milk house. There was a spring there right at the end of that little point that runs down there, and my brother-in-law first built that house, and my mother bought the house of him, and he built the house right close to this spring, and he built a little milk house just over the spring and the (Malheur) lake, when it was awfully high, the wind would blow it right up there, to the end of the little milk house over the spring; the spring is in a low place. (R. 1835.)

b. 1870–1880

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

I have seen the wind blow on that (Malheur) lake; I have seen white caps on the lake; the direction the wind blows generally is from the southwest; there might be wind from other directions. That is the general effect of it. It would naturally move the waters toward the east end of the lake. I have not observed that this wind carried the water for a considerable distance. (R. 1790.)

c. 1880–1890

Mr. SETH S. SMITH, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with Windy Point, and I have had occasion to observe the effect of the wind upon the lake at that point. I was there in the spring of 1889 when the wind was blowing pretty hard from the west; it blew the water pretty near back up to where the old county road used to be; it never went right up to it; the waves were coming up on the high ground pretty near to the road.

I came back that way about a week or ten days afterwards and at that time the (Malheur) lake had receded, gone back, and I should

judge it was a mile back to the edge of the water (R. 1771); that was along about the middle of June (R. 1771).

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, testified in substance as follows:

I have seen the water up to that bank (near Windy Point) when the wind was blowing, and the waves were washing up against it, but I do not recall that I ever saw the water up against the bank when it was at its level—normal level. (R. 2180.)

d. 1890–1900

Mrs. EFFIE L. DUNN, called as a witness for the plaintiff, testified in substance as follows:

The wind would blow and drive the water off of the knoll on which stood the Riley house (R. 852) until it would be high and dry, and the water might stay away for two or three days; and then maybe the wind would come from the west again and blow the water back. (R. 853.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, testified in substance as follows:

I have had occasion to observe the effect of the winds from the northwest upon the water (of Malheur Lake) immediately around my place (R. 1822); the wind would blow the water out sometimes quite a little ways. By quite a little ways, I mean sometimes it would blow it out 200 or 300 feet, sometimes farther. I imagine the greatest distance I have ever seen the wind carry the water out has been half a mile, in places at times. When the wind dies down, the water immediately recedes. (R. 1823.)

e. 1900–1910

Mr. RALPH CATTERSON, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

I have seen the wind raise the water to the top of the bank at Windy Point. (R. 1712.)

f. 1920–1931

Mr. CHESTER W. PEGGE, recalled as a witness for the plaintiff, testified in substance as follows:

There is not much dust on Malheur Lake excepting where the lands on Malheur Lake have been cultivated. There was some cultivation along the north side of the lake in section 23, T. 25 S., R. 32½ E., and for an area between Cole and Pelican Island, about midway between the north and the south meander lines, of perhaps two or three miles square; around that cultivated land on the north side of of the lake we had to give it up one day in May; you could not see a man ten chains, or 660 feet, to save your soul; tried to get in from

work some week to ten days later and that area between Pelican and Cole Islands the dust was so bad we had to stop the car; you could not see the tracks in front of it; except for those two places, the dust on Malheur Lake was not particularly bad. (R. 134–135.)

10. Soil Conditions

a. In general

Mr. THOMAS J. VICKERS, called as a witness for the plaintiff, testified in substance as follows:

The soil down there in Malheur Lake is a blue stuff; a lot of hardpan; there is no sand in it; in the home grant there is a little sand and hardpan; I don't know what hardpan is made of but you have to dig to get through it and it is pretty hard digging. (R. 254.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Isn't it a fact that the western part (of Malheur Lake) has become tramped down and gotten harder and firmer in the years gone by?

A. I suppose it has, but I don't know as to that, though. I have seen a lot of cattle around it. (R. 618.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The cattle grazing around Malheur Lake did not pack the soil down in all these years since Oregon has been admitted into the Union. They were on the ice and snow all the time; the cattle did not wander or go in there until it was frozen; the reason they did not go in there then was because it was boggy; there was mud, water, and slush there. This was a long time ago, and I do not remember all these things. (R. 742.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, on recross-examination testified in substance as follows:

I do not remember whether there was any peat in the immediate neighborhood of the buffalo heads, but in farming out there, you notice in the grain evidently sometime there had been tules, because it looked like the ground was too rich. It looked like there had been tules there, or something. There had been vegetation growing there, and it had not thoroughly decayed like the rest.

There was an indication of the tules all over this land formation there. There had been vegetation there I do not remember about them being right where I found those buffalo heads. There was good grain growing right there.

Mr. LILJEQVIST. Q. I mean in the earlier days. Was there any indication there had been tules there in the early days?

A. This is characteristic of being over the field we farmed there. There are places a little higher than others, and the ground seems to be like—there is some kind of vegetation, and I would say it was tules. (R. 1236.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The (Malheur) lake bottom is pretty well made up of that white chalky soil. (R. 1374.)

Mr. LILJEQVIST. Q. Let me ask you this, Mr. Hanley: In the springtime, as they would work their way off to the edges of Malheur Lake, what is your judgment of whether the innumerable tramping of cattle had any tendency to make the ground firmer and pack it down?

A. Well, the ground has changed a lot since we first knew it. I know many fields that you have to have big levees in now and keep working at them, that before were perfectly smooth and filled up with water; now we have to do things to keep them covered.

Q. Down in the (Malheur) lake wasn't that ground a great deal softer in the earlier days than it was subsequently?

A. Well, I have seen the upper end of this valley so soft, if a badger had you 150 yards away, he could dig in quicker than he could run out; he could dig himself in before you could get up to him.

By the upper end of the valley, I mean any place east of here (Burns, Oregon); around the sloughs out here. (R. 1394.)

DR. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Your observation of the western part of the (Malheur) lake, the cutting of hay, and allowing cattle to go in there, that had a great effect upon the ground, didn't it?

A. It had an effect upon the vegetation. As far as the ground is concerned, I wouldn't have any knowledge on that. I haven't thought along that point, but I would say in a general way that the tramping of cattle would first make it muddy, and then make it more solid after they tramped on it, but I (R. 1637) wouldn't know what effect it would have on the soil itself.

Q. You do not know what effect the traveling herds upon such vegetation as this would have with reference to making the ground firmer?

A. No, I do not; I wouldn't know what effect it would have. (R. 1638.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Isn't it your judgment the wind has a great deal more (R. 1801) opportunity to drift the sand and blow the dust in recent years, the last 25 years, than it had before when the

grasses grew through that country (the eastern part of Malheur Lake, in the vicinity of Windy Point) (R. 1801)?

A. It might, but there wasn't much sand; where the sagebrush grows there is very little sand. It is a soil mostly.

Sagebrush might grow in fine soil texture. It is different from sand. You don't find much sagebrush growing in sandy ground; it is finer and heavier; the top of it gets dusty; I have seen plenty of dust out there (in the vicinity of Windy Point), but I do not recall that sand. I have seen plenty of dust around Windy Point; and I have driven cattle there when I could not hardly see the animals I was driving.

Mr. LITTLEFIELD. Q. Have you studied enough geology to know drifting dust in 30, 40, or 50 years will build up and change the country a lot?

A. Well, it might; I would not dispute that fact. (R. 1802.)

Mr. CLAUDE MCGEE, called as a witness for the plaintiff, testified in substance as follows:

In June, 1888 (R. 2008) when I saw Harney Lake after the wind ceased blowing and the water had receded back it left a lot of dead fish out on the sand (R. 2009).

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In the south half and west half (of Malheur Lake), the brown contour lines, on Plaintiff's Exhibit No. 3, indicating higher knolls, are generally sand; in the sloughs, and the low places they are generally tule beds; the tule-bed soil in places is several inches to nearly a foot deep. I can not make any definite statement as to what kind of soil is above and below a particular contour line; there are too many different kinds of soils and it is too big a country to make a statement concerning.

The slight projections contoured on the map, Plaintiff's Exhibit No. 3, are not merely accumulations of vegetation and decayed matter which has grown year after year. The peat and decayed tule roots are in the depressions, and the solid ground is on top of those knolls. (R. 2262–2263.) An interpretation might be placed upon the testimony of some of the witnesses that there is a great deal more open space (or channels in the west end of Malheur Lake) than my examination has led me to believe existed, but I never saw it when the water was in there, as it was entirely dry when I made my survey. I made no tests to determine how deep the mud would be when the water was on that soil, and I can not tell. There were two fires down there (in the west end of Malheur Lake) during the time we were working on that survey and the soil, a vegetable formation, around those fires, burned to a depth of about six inches; in the tule beds, in the lower ground, the depth of tule roots would be deeper than that. (R. 2264–2265.)

Mr. GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. I want to ask you this question: In the area where the buffalo skeletons were found and marked on Plaintiff's Exhibit 3, and for a space in there of about two or three miles square just immediately south of the Big Grain Field shown on his map, was there any peat in that soil?

A. Yes; there's peat all through there.

Q. Mr. Benson, in addition to the place marked on this Plaintiff's Exhibit 3, where the buffalo skeletons were found, will you state what other area in there, if any, you found buffalo skeletons, upon or in.

A. I found a buffalo head and an elk head right up in here [indicating].

Q. About 3 inches southwesterly of the contour line 88.8 with a blue cross on it—is that right, on the map Plaintiff's Exhibit No. 3?

A. Yes; west of the north tower, clear west across the Big Grain Field. I found 31 in one bunch, and then down here [indicating] I found some big ones, just about half a mile easterly of where "buffalo skeletons" is marked on the map, and scattered all over the west of Cole Island, all over that area.

Q. Did you find peat in there too?

A. Yes; there's peat there. (R. 2534.)

11. Ice conditions

a. In the early days

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

The cattle drifted into Malheur Lake during the winter as it froze up so that they could get from one island to the other; they drifted in all through the country where there were tules and grass. (R. 214.)

b. 1880–1890

Mr. JOHN L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

December, January, and February were the frozen months. (R. 896.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There would be ice on the (Malheur) lake in February, down on the water; and it would be on the water in January, too.

Mr. LILJEQVIST. Q. You mean the ice rises and falls through that country, is that what you are trying to tell us?

A. No, I don't mean that. I mean that the ice—the water might have froze maybe a half inch, and the freeze would cause the water to sink away or something.

The ice would get five or six inches thick on the (Malheur) lake; I have seen it (R. 2093) a foot thick. I have packed ice off the (Blitzen) river last winter, that was fourteen inches thick. That was not a frequent thing in this country. I have seen lots of years we could not cross the ice because on the main ice proper you would break in, even skating afoot; I have seen it happen that way all winter; but the wet ground would freeze enough so that you could go over it horseback or afoot.

I have seen it extremely cold down there; they told me it was 44½ degrees below zero up here at Burns; and I was there winters the ice would not freeze over two, three, or four inches thick all winter; that is different years. I do not think that they cut ice in (Malheur) lake for use at the Narrows; they might have done so; they might have cut some ice down near the Narrows, but not on this lake. This (Malheur) lake is nine miles from the Narrows. (R. 2094.) I have never seen them put up ice in the wintertime for use in the summertime at the Narrows.

I have seen times that the ice in that (Malheur) lake did not freeze more than a few inches, and I have seen it other times when it froze harder; it froze 14 inches thick; I have put up ice that froze 14 inches thick, that is, this last winter. (R. 2095.)

c. 1900–1910

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

They skated there (on the Malheur Lake) right down below my house quite a lot. I guess there has been a lot of skating there in the wintertime from the time I first knew it; but I never skated on the lake. The young fellows used to start out from the house, or close by there, and skate away, but I do not know how far they went. You could go quite a ways if you wanted to, I guess. (R. 2122.)

d. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

When a given body of water becomes frozen into ice, it expands, and assuming there is no underground seepage from Malheur Lake, if the water surface was at a certain stage, and froze 12 inches over the surface of it, certainly the surface would have been higher than the water before it froze, in shallow lakes such as that one. (R. 2284.)

e. Thaws

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

Lots of times the ice would break up on the lakes in February, and then freeze up again. (R. 139.)

12. Roads—Road conditions

a. 1931—In general

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified on cross-examination as follows:

In the eastern part of the map, Plaintiff's Exhibit No. 3, I have indicated roads there with double dotted lines. Those places are where, in those dry years, people have gone in an automobile through the body of the (Malheur) lake, and where there was sufficient travel to make a distinct set of tracks across the lakes. There has been no grading up or building through there at all.

I have not attempted to show all the secondary roads across the lake.

There was a bridge constructed at one time across a slough on that road that leads from Doc. Graves' house to the higher point out in the (Malheur) lake, to the bat house, as it has been testified to here. The bridge is in pretty bad shape now, nearly washed out; that was the only construction made on that road that we observed. (R. 2286.) There was no grading there, or anywhere else in the (Malheur) lake. (R. 2287.)

b. 1889

Mr. GEORGE FRY, called as a witness for the plaintiff, testified in substance as follows:

When I drove the stage between Burns and Fort Bidwell, I crossed the western half of Malheur Lake, along the road about three miles east of the Narrows, going south (R. 1126) and it seemed to be tules all the way across there (Malheur Lake). Of course, there was some depressions in the lake that had a little water in them. The road followed kind of a ridge in the bottom of the lake. (R. 1128–1129.)

Cross-examination:

The year 1889 was the only year I drove the stage. (R. 1129.)

c. Old Military Road—Camp Harney, Oregon, to Winnemucca, Nevada

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

I think I know every road that was designated as a military road. The old military road that ran from Camp Harney, Oregon, to Winnemucca, Nevada, started at Camp Harney and followed the base of the hills by Cow Creek, Rock Creek, Crow Camp to Crane Creek Gap (R. 1790), what was known as Crane Creek Gap. There is a town there now, or village. And then on to Crane Creek, down Crane Creek to where the south fork of the Malheur (River) comes into Crane, or where Crane really goes into the Malheur, and then it

followed up the south fork of the Malheur (River) to what is known as Summit Springs, and thence down the other side of the mountain until it struck the Oregon State Road that went from Crane Prairie to Camp McDermott on by the southeast side of Steen's Mountain and the south of it by Junipero and Alvord and on by Camp C. F. Smith and Camp McDermott. That was the military road that laid south.

Mr. BLACKMAR. Q. This road that went by Windy Point, did some of the travelers from this community around here, going to Winnemucca, use that road by Windy Point?

A. Well, those people that had a light rig could go over the mountain from Anderson Valley and down the steep hill to Junipero, but it would be impracticable to haul freight or a load of any kind on it, because that was a very steep long hill, and a team could barely draw an empty wagon up it, and that was never a military road in any sense; never considered so. (R. 1791.)

13. Furbearing animals, fish, birds, waterfowl

a. In the early days

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There were lots of muskrat houses in Malheur Lake in the early days, but I did not see any muskrats; I did not do any trapping myself. There were lots of coons on the lakes, and on the river there were lots of beaver and otter.

I never knew of anyone fishing in Malheur Lake. (R. 163.)

Mr. FRANK WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Between the tules and the open places of the (Malheur) lake there was a lot of waterfowl. There were not so many muskrats in the early days until later on when the water receded enough so that they could have houses. The muskrat has to get out of the water the same as everybody else to sleep and they built up what we called muskrat houses out of tules; they stand up about two or three feet high; the muskrats came out (R. 204) of the water into those tule houses (R. 205).

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

There were lots of ducks and geese and different kinds of birds on Malheur Lake in the nineties. (R. 219.)

Cross-examination:

We were able to shoot ducks in the summertime in the early days; there were lots of ducks then, and up until recent years, and if permitted to kill those ducks and sell them for market, there would be a vast food value and a great revenue derived from them. I have

gathered a good many duck eggs in the early days and everybody in the country gathered them (R. 232).

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

The next time I saw Malheur Lake was in 1883, when I was down there trapping muskrats and such like, in the fall of the year, about this time. When the letter "r" comes in a month, that is when we trap muskrats, and after it freezes up, we go afoot. We trapped all over Malheur Lake; and Cole Island, and Pelican Island; and the channel that goes down toward the Haley place, and up on the (Silvies) river to the Showen place. We would go all around; may be at one point to-day, and some other to-morrow. (R. 267.)

Cross-examination:

I trapped quite a lot in the early days. Quite a lot in the wintertime, and a lot of other people trapped too. They did not set traps in the summertime (R. 294); it was all done in the winter, a little later on than now. Any time there is a letter "r" in the month, the fur gets good, and this is the reason we trap in the wintertime. The muskrats were still there in the summertime, hundreds of them, but that industry did not become important. Some fellows would hunt and some just a little, and others would not. I did not know until recent years they have been selling thousands of dollars' worth of muskrat skins, taken out each year. They would go in and get eggs sometimes. The wild game was in there and the birds, and we would get out in a boat and go down in an open channel. (R. 295.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, testified in substance as follows:

I have not been around Pelican Island, but I remember there were a lot of pelicans around the (Malheur) lake; I do not know what they call Pelican Island. I was more interested in cattle than birds. (R. 541.)

Mr. JAMES THOMAS BAKER, called as a witness for the plaintiff, testified in substance as follows:

I have never done any trapping down on Malheur Lake, but I think I have seen trappers there; they go from one trap to another on the ice; they were there in the wintertime; I do not know that they trapped there in the spring of the year. (R. 581.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

The water that came through the channel at the Narrows was tainted a little bit with alkali. We never used it for drinking purposes. There was always some fish in the lake there, but not any that we ever got. The fish were small and not big enough to eat.

From 1908, almost every fall, up to quite a recent time, I went hunting in and about Malheur Lake for ducks and geese; just one trip a year perhaps, and occasionally for other purposes. I hunted mostly in the northern part of Malheur Lake, below Lawen, near the Howell oil well that has been spoken of. (R. 627.) From the oil well we went into the tules where there was water. We did not use a boat, we wore rubber waders, or boots.

I can recall one particular period that I hunted west of a little south of Saddle Butte in the spring of 1909 in company with two or three others. There was plenty of game and water there. That was outside of the meander line. (R. 628.)

It was a grand sight in there among the tules in Malheur Lake as far as bird life was concerned. There were plenty of birds and muskrats. (R. 632.)

Mrs. OLLIE DARSEY, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

Pelicans do not build any nests; they just form it (R. 664) out of sticks; they pack greasewood, things like that for the nests, then they kind of make a hole down in the sand. I suppose they put these sticks up for protection against the water when the wind blows it and slashes it up against the nest, you know. Pelicans usually nest in April, and they were nesting when I was there. (R. 665.)

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

I have shot ducks through there (in the western half of Malheur Lake) in what we called the "fly-ways," which are mostly on the ridges out in the lake; there will be one little lake, and they fly out to those small lakes on the main lake to feed; they have a course which they follow from the main lake; they go in there to roost at night, and come out to feed and they have a certain way to go, and maybe in that lake there will be five or six fly-ways on top of the ridges, which they follow. That would be in there between the tules.

SPECIAL MASTER. That is kind of a landing field?

A. Small field; yes. (R. 1050.)

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I think there was fish in Malheur Lake in the early days. (R. 1117.)

I have never seen any fish in Malheur Lake. (R. 1119.)

Mr. LEROY BUNYARD, called as a witness for the plaintiff, testified in substance as follows:

I always trapped in the wintertime, mostly for muskrats.

Mr. BLACKMAR. Q. What kind of ground do these muskrats frequent?

A. Well, they usually have a house built out of tules, a big pile which looked like a shock of hay, and that is where they stick. That is their den.

A muskrat has to have a house which is built out of (R. 1156) the water; they have it up high enough so that they go down underneath in the water and come up in the top of it where it is dry, above the waterline.

East of Mr. George Thompson's place there is some open water in certain years.

Mr. BLACKMAR. Q. Muskrats frequent that part of the lake?

A. All over, all over the (Malheur) lake where there is water enough for them. That is, of course, they don't get out into—beyond the tule line. They stay in the tules. (R. 1157.)

Cross-examination:

I sold the skins of the muskrats. There were a lot of muskrats caught, and they got about five cents each for the skins in those days. (R. 1166.) I do not know how many skins were taken out a year in those days. The muskrats built their houses out in the tules above the water, the bottom of their houses would be in (R. 1167) the water, but the tops were out.

Mr. LILJEQVIST. Q. Were these muskrat houses all through the western part of that (Malheur) lake?

A. That is, where there was water enough.

Q. Well, where was there water enough for muskrats?

A. Well, sometimes there was water, and they built their nests and houses out at the high-water place, and when it receded in the fall their houses would be dry and——

Q. (Interrupting.) Whether it was wet or dry, I want to know how much of this area in the west part of the (Malheur) lake on a line drawn from the Blitzen on the south and the west fork of the Silvies (River) on the north, how much of that area to the west did the muskrats build nests?

A. I could not say, because I did not trap over that far; I don't know. I only trapped over the northern end of Malheur Lake. (R. 1167.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

There is only a sample left now of the birds that were here around the (Malheur) lake when I first came into this country, both as to quantity and kind. Still, I think, maybe that nearly all those kinds of birds come there to the OO Ranch, but the quantity is just a sample of what there used to be. Quite recently, in the spring, after the birds are in, it was like a caravan lining the sky. I have seen them two miles long with the air just full of them. They generally separated from the other birds and came up to this north end of the valley; and when they start on that flight every one of them goes; there is never a one left, except he is a cripple, or something like that.

There are never two flights. They come back in broken order in the fall. The reason for that is they are going to their nesting grounds in the spring. It is a different flight, and they come back in broken order.

Mr. BLACKMAR. Q. When you first came into this country did large numbers of these different kinds of birds nest down there in Malheur Lake, and was it a breeding ground for them?

A. I really think the nesting idea is just a little bit misunderstood. Most of the nesting is off from the lake. The lake is so irregular, and if a bird is going to nest, it knows what it is doing, and there is no mistake about that, and they (R. 1363) know where the feed is, and they know where they want (R. 1364) to produce their family.

Q. Let me ask you this: In all the time you have been familiar with these lakes, there has been a considerable nesting on this Pelican Island, has there not?

A. That is, by the scavenger birds.

I am talking more now about the other birds, other than the scavenger birds. By the scavenger birds I mean the pelicans, gulls, and some heron; but mostly pelicans and gulls.

Mr. BLACKMAR. Q. But in the respect you just mentioned, the pelicans want to build their nests out of the water, just the same as any of these other birds?

A. Just the same. The pelican and the gull are back country birds. The gull is not a sea-gull; he is a land gull, but he comes into the land and raises his family; and if there is any reason for him to get back there in a day or two, there will be plenty of gulls come; they have a way of distributing the information to the others.

In the early days, we had a good many of those birds called the egrets around here; there are some of them left (R. 1364) but outside of the OO Ranch, there are not very many of them to what there were in the early days. There were thousands of them around here in the early days. Those are the birds that were sought by the plume hunters, and they cleaned them out. There is some hidden mystery about a bird that has a feather like the egret. It is very attractive to the women. (R. 1365.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, Mr. Hanley, there was a vast quantity of muskrats which bred and thrived in this (Malheur) lake from the beginning until just recently when it dried up?

A. Yes. In those times that we are talking about, in the eighties, the lake seemed to be plumb full of those muskrat nests, and we would have to watch out for them when we were riding on the ice.

There were only one or two trappers in the country and they were kind of particular. Their fur (muskrat fur) was good usually only in the wintertime; they would only trap them in the snow.

Mr. LILJEQVIST. Q. Now, it is a fact, isn't it, that the fur from the muskrats in that lake was of a vast monetary value?

A. Well, I am not a fur expert, but I know it was classed as good fur.

Q. Let me put it this way as a theoretical proposition: If we have some rainfall and snow back in this country, and this lake fills up, and the muskrats hadn't been killed out, and the Government allowed a man to go down there, it is true that a vast fur industry could be carried on, as you know that country?

A. Yes. There has been a big fur business there.

Q. And the ducks and geese were in there by the millions, weren't they?

A. In the spring and in the fall I never thought there was (R. 1386) such a tremendous amount of them nesting there, and hatching there; maybe there were more than I thought.

Q. And it doesn't take a lawyer to tell you that those birds had a vast food value?

A. No; but the birds' living grounds are up in these upper meadows, up in the upper country here. That is one thing that the Government should consider in creating this Bird Reserve. Their feeding ground has to be well considered; they must have good feeding grounds, and good feeding country is up in the upper meadows, and there will be a question raised as to how much the development of the country can stand. (R. 1387.)

Mr. SIDNEY COMEGYS, called as a witness for the plaintiff, testified in substance as follows:

The principal animals that my relative, Harvey Reinhart (R. 1450), trapped were muskrat and mink. I do not remember whether he got any otter in there (Malheur Lake) or not. (R. 1451.)

Mr. MARION HORTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never went out on Malheur Lake muskrat hunting. (R. 1473.)

Mr. JAMES J. DONEGAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I know from general knowledge that there were muskrats caught in that (Malheur Lake) country, but not from my personal experience or observation. (R. 1536.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

With reference to furbearing animals, for nine years there have not been any caught there (in Malheur Lake). Previous to that time there were a good many muskrats caught. After the date I came (1899) it was practically reduced to muskrats. There were no other animals taken there in the early days, but the muskrat is the one of economic value, but they have disappeared. The whole cause may have been the slackness of the water, but anyway they disappeared, and they haven't been there for a number of years; the

Government would not allow anybody to take what few remained, and there were not many to take, anyway.

Before this last period when it began to slacken up, I do not know how many skins were taken out a year, but it was a considerable number. Several trappers trapped there, and there was no way of keeping a record before the Government took charge; it was very hard to keep any (R. 1636) record.

I would not try to place the number of muskrats that were taken out of there after the Government had put a warden in there, because it is a matter of record, and you can get it, but it was several thousand pelts which were taken out each year. (R. 1637.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, testified in substance as follows:

I never trapped any muskrats. I had a brother who trapped muskrats there; he was drowned; he trapped back on Malheur Lake and down along the Spring Branch; I have trapped, but mostly coyotes in the hills. I did not trap any muskrats. (R. 1828.)

Mr. JESSE FARRIER, called as a witness for the plaintiff, testified in substance as follows:

I have trapped down there on Malheur Lake; and I was there three winters. (R. 1927.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never did trap muskrats in the western part of the (Malheur) lake. I only trapped muskrats in where I live, and going around east along Cole Island, because that was the biggest parts of them (the places) in those days that I trapped muskrats. (R. 2089.)

Mr. GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

In the fall of 1909, when I located on the south side of Malheur Lake (R. 2498), myself and Frank Caldwell lived in a tent the first year and trapped. We lived at that time at the same place where the cabin now is located.

I did not build the cabin. I bought it from Tim Crowley in the swamp, in the west part of the (Malheur) lake, and moved it up there. I did not tear it down and rebuild it; I just put it on skids.

We trapped out into the north part of the (Malheur) lake, north of that claim there. We trapped for muskrats and we sold them. I think we got forty cents for them on an average, something like that. That year we got about six thousand of the rats; about 78 mink, I believe. I think the mink sold for $5 apiece. There were other persons trapping at that time; there must have been 10 or 12; I am not sure. (R. 2499.) They were all trapping for the same fur-bearing animals that we were. I could not say what the total amount all the trappers got.

I do not remember the date I moved the cabin there but it was within a few years after the fall of 1909.

I continued trapping every year after that up to the dry years, but I do not remember when I ceased to trap. I do not believe that I have any recollection of the approximate amount of muskrats and mink that I trapped myself during the period that I did trap. I would not know. As the years passed (R. 2500) rats got scarcer. The prices got higher as the years passed. (R. 2500.) I do not know when I trapped last, but I think it is on one of those sheets [memorandum]—about 1919 I guess. I believe that was the last year I have any recollection of. I don't think there was any prohibition on trapping from 1919. I ceased trapping because of the scarcity of the animals and the scarcity of the water. The largest number of muskrats that were taken off that lake during the time I was there from the fall of 1909 on was in 1909, the first year I was there, when we took about six thousand rats.

As game warden I kept a record about 1918 and 1919 [list of animals trapped is handed to Mr. Liljeqvist].

I prepared for the U. S. Dept. of Agriculture, Biological Survey Bureau, a tabulation of the muskrats and other fur-bearing animals taken by myself and others during certain years. The figures on the memorandum cover November and December, 1918 (R. 2501) and January and February of 1919.

Date	Fur-bearing animals	Number	Date	Fur-bearing animals	Number
1918, November	Muskrats	3, 413	1919, January	Muskrats	2, 109
	Mink	13		Mink	12
	Skunk	1		Skunks	2
	Coyotes	2		Weasels	2
1918, December	Muskrats	1, 769		Coyote	1
	Mink	24	1919, February	Muskrats	1, 186
	Skunks	3		Mink	82
	Weasel	1		Skunks	9
				Weasels	5

(R. 2502.)

The total number of muskrats trapped were 8,477; mink 131; skunks 15; weasels 8, and coyotes 3.

The skunk furs at that time sold for about $3; the weasel furs for $1.25, and the coyotes about $6.

The report that I have given here includes all of the trapping reported to me in Malheur Lake at that time. There are other records for prior years, but I do not seem to have them; I do not know what became of them. (R. 2502.) The records that I have produced here are the only ones that I have since I have been Warden

of the Reserve. I became Warden of the Lake Malheur Bird Reservation September 1, 1918, and I have been warden ever since.

I do not know what would be the number (of fur-bearing animals) taken from the lake during a year. I can estimate from those sheets [indicating his report]; that is the only thing I can figure on.

I would think that the least price usually obtained for muskrats was 40¢ and the highest price $3 (each); and $5 for the smallest mink up to about $7.

There are a few otter there, which would average about $20 a skin.

We caught the animals in steel traps which we would set on the runways (R. 2503) in that part of the lake where there were tule bunches—the tule area, practically all around the lake with the exception of the extreme west. All the islands where there were tules there were muskrats in the lake; there were muskrats throughout the entire western area (of Malheur Lake) north to the Silvies (R. 2504) River. There were muskrats in the entire area west of that towards the Narrows just a few years when the water stayed there—there were lots of muskrats then; the greatest quantity of muskrats were around the main body of the open water; all around the edges; around the tule border—Cole Island, around there; there were not many around Pelican Island; there were a few sloughs there around the edges of the tules on the border of the lake in T. 25 S., R. 32½ E., north of the lake, that may have had a few muskrats on; there were muskrats in the area along the higher portion that goes out from Graves' Ranch, sometimes referred to as Graves' Island (R. 2504); there were lots of muskrats out in the area northerly or westerly to the mouth of the Blitzen River (R. 2504–2505).

Mr. LILJEQVIST. Q. How far westerly from a line drawn from the mouth of the Blitzen to the mouth of the Silvies did these fur-bearing animals come? The tule area easterly of Graves' Ridge and northerly from your cabin, were there muskrats in there?

A. Oh, yes.

Q. How far westerly of that line did they exist?

A. If there was water in there, they went all the way through to Mud Lake.

If there was water in the westerly part of Malheur Lake you would have muskrats all through that area.

We took care of the skins by drying them; putting them on a stretcher.

We did our hunting in the fall and spring and we used boats altogether in setting our traps and in getting the muskrats. We would bring the muskrats in and then we had a shed where we dried them. (R. 2505.) After we had dried them we packed them in a frame or crate, pressed them and kept them there until we got through, then we baled them for market and laid down some sacks that we cut open and put sacks on top of them and pressed them down.

After we got them off the lake and had baled them we generally took them to market on a team into Crane; sometimes we went out to Milford to ship them to Ontario.

I do not believe that there was a public road leading from Malheur Lake to a railroad at that time. I believe the nearest railroad was up Malheur Canyon. The railroad had not got into Crane at that time; I do not remember when it did. I remember the occasion though, but I can not tell approximately; I do not remember; I could not even make a guess at it. The railroad was not there when I went there in the early days. (R. 2506.) I could not state just what year it came there; I would have to look it up. The railroad did build into the town of Crane.

There were roads leading from Malheur Lake to Crane; there is a public road in the immediate vicinity of Springer's Spring, which was there when I first went there, and it is called Lane Road, and it is on the Meldrum Line; it is the old road that goes to Ontario; I suppose down through the gap and down Malheur (River) to Ontario. Between Springer's Spring and the east side of Malheur Lake, the road turns off from the road that goes to Crane, onto the road that goes to Ontario. That road was there at that time, and teams and automobiles have been going on it ever since. It has been changed in a few places and gradually improved. (R. 2507.) The road that I have referred to led past Springer's Spring and extended easterly and also (R. 2508) (westerly) across the Narrows Bridge where it led to Burns and the OO Ranch section.

I think there was a road from Burns to Bend and to Portland. There was a road out towards Pendleton, but I never rode on it at that time.

There has been a railroad at Bend for a good many years; I suppose there was a railroad to Portland before I knew the country.

Mr. LILJEQVIST. Q. What I am getting at is this: When you took your muskrats from the lake and put them into your boat and brought them into your cabin, skinned them and dried them and baled them, were you able then to go from your cabin to a road immediately joining the lake and take them to public market and railroad?

A. Oh, yes.

Q. Since you have known it, there have been public roads leading from town and railroad centers in Oregon to Malheur Lake; isn't that correct?

A. Yes. (R. 2508.)

During the time I have been supervisor, lots of people have learned that it (Malheur Lake Bird Reserve) is a Reserve, and have not given me much trouble.

Mr. LILJEQVIST. Q. If it had not been a Game Preserve, there would have been a vast number of ducks that could have been got in there and lots of water fowl that would have been got for eating?

A. Yes.

Q. Has the Government ceased issuing permits for taking fur-bearing animals from inside the lake?

A. No, sir.

Q. Do you know when they first commenced to issue permits?

A. I think the first season it was set aside as a Reserve. (R. 2529.)

Cross-examination:

We took some of the skins, that we obtained by trapping, to the railroad point to ship. We drove to Parma, Idaho, from the lakes and shipped from there. The other fellows shipped them by express, from Lawen, but they had to go out on the stage line. I shipped some at the Narrows one time and put them on the stage line. (R. 2535.)

14. Sodhouse Spring—Springer's Spring

a. Water conditions

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

I am not as familiar with the south side of Malheur Lake as with the north side. (R. 192.) I was at the Sodhouse Spring in May or June of the year, but I can not give the year. The water at that time was very plainly in sight, and about half to three-quarters of a mile from the mainland. (R. 193.)

Cross-examination:

When I was down at the Sodhouse in the early days, I do not think I saw the water back up into that spring. You could see the lake there plain from the Sodhouse Spring. The water was about a mile from the spring. (R. 199–200.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I first saw the Sodhouse Spring (Springer's Spring) in 1883. John Marshall took a place up in there, and Bill Marshall, his brother, was above him. Right back of Springer's, there was a little lake, and there was a little (R. 285) channel there that ran into Malheur Lake from that spring, and the water of the Blitzen would follow that channel down by Bill and John Marshall's places. In the early days, the water of the lake would back up close to Springer's Spring (Sodhouse Spring), but maybe not quite; sometimes it would be up there. The last time I saw the Sodhouse Spring was about ten years ago. I do not think that the water would rise up higher in the early days in that spring than it did ten years ago. I think it is the reverse. (R. 286.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I am familiar with the Sodhouse Spring.

Mr. LILJEQVIST. Q. After the Sand Reef broke through where did the water come to at the ordinary high-water season at the head of the stream?

A. I guess pretty well up on the banks of it. (R. 522.)

Q. Now, how high, after the Sand Reef broke through, did the water come up onto the bank in Springer's Spring, in the ordinary springtime of high water?

A. Well, I have seen that spring very high for a good many years. (R. 531.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I can not tell you exactly where the water came in ordinary springtime with reference to the Sodhouse; there were banks along there by that Sodhouse Spring; and I can not tell you where the water came with reference to those banks. (R. 544.)

Mr. CHARLES R. PETERSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I am familiar with Springer's Spring.

Mr. LILJEQVIST. Q. In ordinary seasons of high water where would the backwater of the lake come to?

A. I was in there several times when the spring ran down until it struck dead water, and it was only a short distance when it struck dead water.

Q. When it struck dead water how far northerly was it of Springer's Spring?

A. I don't think it was over a quarter of a mile. (R. 695.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, testified in substance as follows:

There is lots of water on the Caldwell homestead. The Blitzen (River), it seems to me, moved the water that way, and then another part went to the Sodhouse Spring and divided up there about the middle. (R. 826.)

Cross-examination:

The Blitzen River runs northerly into the lake, and as it goes down in the vicinity of Springer's (Sodhouse) Spring, it is diverted and has been for many years over the patented lands. (R. 834.)

I know where Springer's Spring is.

Mr. LILJEQVIST. Q. Did you see the water in that place back up in normal seasons of the year.

A. I don't know whether it was normal or not. It seemed to be high in there. I have seen it at times when it was pretty high. (R. 840.)

Mr. WALTER B. PARKER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been around the west and south sides of Malheur Lake, and I have been to Springer's (Sodhouse) Spring, but I never was there

when the water of the lake backed up, and I do not know of my own observation that the water of the lake ever did back up in there. (R. 877.)

Mr. GEORGE FRY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I am familiar with the rock in the Sodhouse Spring. It was located about fifty yards from the south shore—from the bank, in about the center of the spring there. In the early days there was lots of water in that spring. In the early days that rock stuck up above the water about eight or ten inches in the high-water period. I remember a water mark on it at the time we built a fence across there in 1889 (R. 1132), and I was down there a week ago Sunday and that mark was still there in the same place.

Mr. LILJEQVIST. Q. Was that mark apparently caused by the water remaining long enough in the spring and summer of the years to impress upon that rock a well-defined water mark?

A. Yes.

I told Mr. Dodge here, Saturday I think, about that mark, and the mark is still there.

Mr. LILJEQVIST. Q. And in your judgment, that mark indicated normal high water in the spring?

A. Yes.

Redirect examination:

Mr. BLACKMAR. Q. What do you mean when you say it indicates normal high water in the spring? Do you mean of the spring?

A. No, of the lake. The lake backs up in there, and that was the elevation of the water, as I take it, this mark on this rock. (R. 1133.)

Q. That is the elevation that it had reached at some time?

A. Yes. (R. 1133.)

Q. And whether or not it was last year or 50 years ago, or 100 years ago, you do not intend to say, do you?

A. Well, I think that is the water line of that lake for a good many years, to make that white mark around there.

1885, I would judge, would be about the time that that happened. Well, for many years before, I would judge. That mark is very plain to this day and that is over forty years ago.

That rock is located, I should judge, about 50 yards from the west shore, and about 50 yards from the south shore. It is just about the center of what used to be the pond there. I had an opportunity to observe that rock there for five years—from 1885 to 1890. I think that the water came up to that rock at least three of those five years. I do not think the water ever did get higher up or over that rock. (R. 1134.)

In 1888 and 1889 the water failed to reach that rock (in the Sodhouse Spring). (R. 1134–1135.)

Mr. BLACKMAR. Q. So that when you say in your opinion that that is the normal high-water mark, you are basing your answer on the five years that you have just detailed?

A. Yes.

Q. That is the water height three times out of five, and you think that makes a normal high-water mark?

A. Well, of course, the shores of the lake; I knew about where the water came out on the lake around Windy Point and around east of the spring there. (R. 1135.)

Out from the road at Windy Point, there is a little bank there that dips down about two feet. I have not seen the water up to the top of that bank. Some years I have seen the water stand a good ways out from that point, and the distance that it stands out from there changes from year to year (R. 1135) and from season to season.

Mr. BLACKMAR. Q. And with your experience there, you have hardly ever seen two years which are exactly alike.

A. No.

Q. The fact of the matter is, this lake is very erratic?

A. (Witness laughs.)

Q. And that has been your experience with it?

A. Yes.

Mr. BLACKMAR. That is all.

SPECIAL MASTER. Q. How often have you been to the Sodhouse since 1890?

A. Oh, I have been down there, I guess—I believe but once, that is, right at the spring; but I have been in the neighborhood there two or three miles, I guess, a half dozen times.

SPECIAL MASTER. You haven't observed the rock then since 1890, except during the present year, is that correct?

A. Yes, that is correct.

Recross-examination:

When I saw the mark there on the rock, it was when we built the fence across there, we fenced off about one-eighth of the ground for stock to water in at the place where the spring came in. That mark had the appearance of being an old water mark. (R. 1136.) I recently pointed out that identical spot to Mr. Dodge.

Mr. LILJEQVIST. Q. How did you happen to be down there with Mr. Dodge?

A. I wasn't there with him, but I just remembered that mark on that rock when we built the fence across there, and I took a note of it, and it struck me that probably was the water line for many years.

I saw that mark there recently, a week ago Sunday I was down there. I had my wife and another lady with me. Mr. Dodge was not there with me.

SPECIAL MASTER. He saw Mr. Dodge Saturday.

A. I saw Mr. Dodge here and mentioned that fact.

And that mark on that rock is still there where I saw it in the early days.

Mr. LILJEQVIST. Q. And you are familiar enough with the banks of the lake where the water comes upon them to tell what a water mark is on a rock?

A. Yes.

Q. And this is your best judgment of its appearance and how long it has been there?

A. Yes; well, it has been there for 40 years, since I saw it first.

Q. And is it still at the same place?

A. Yes. (R. 1137.)

The two years that I testified that the water did not come up to that place were the very dry years of 1888 and 1889; I noticed that the water had fallen there about 15 to 18 inches; that is the reason I noticed the water line; that was in the fall.

Mr. LILJEQVIST. Q. Then the water in the spring, at the fall of that extreme dry year, was this distance you have described below the water mark on the rock?

A. Yes.

Q. Now, around the lake. Will you state whether or not there is any indication of vegetation where the normal high-water mark of the lake comes?

A. Yes.

Q. What is that line—the water line? What grows immediately above it?

Mr. BLACKMAR. May I ask him first, before he answers that (R. 1138), what he means by the normal high-water mark? Do you know what he means by the normal high-water mark?

The WITNESS. Well, I would think it was where the lake came out in ordinary high water.

Mr. BLACKMAR. I thought you told me it came to different distances in different years.

A. Well, so it does.

Mr. BLACKMAR. Then, what are you fixing as the normal high-water mark?

A. Well, that rock there in that spring, I would call the normal high.

Mr. BLACKMAR. That is all. (R. 1139.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

At the time when I told of the water coming up to the old Meldrum line, old Sodhouse Lane, the Sodhouse Spring water bubbled up underneath, and the backwater from the lake would back clear up into the spring. There must have been a couple of hundred feet of water in there; backwater from the lake. (R. 1375.)

The water in the Sodhouse Spring would not change much until pretty well along in the season. The flood waters did not really affect it. Of course, there are some years the (R. 1378) Blitzen (River) will run all winter and the Silvies River will be forced up; I do not know how to account for it. (R. 1379.)

Mr. GEORGE MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

I am fairly familiar with Mr. Springer's land, and the spring there on that place, which has a large stone in it; I am familiar with the stone (R. 1686) and know that there is a water mark on it. I suppose it was the water that caused the water mark. What caused the water to rise up to that point on that stone was the dam in there—in that spring branch there down below there. I think that caused it. I think that dam is something like a half a mile down there below that rock. I do not know how many years that dam has been there; I have been gone from there for eight years. That particular dam was not there when I left; there was another dam there of some kind before I left; there was another dam there put in that spring branch, below the spring, and the purpose of putting it there I think was to raise the level of the water. (R. 1687.)

(NOTE.—The elevation of the top of the rock is 4,095.7 feet, and the top of the highest water mark on the rock is 4,094.6 feet; the difference between 4,095.7 feet and 4,094.6 feet being practically 1.1. The elevation of the ground at the base of the rock is 4,093 feet, even. The level of the ground at the spring is lower. I have not been able to get the elevation of the dam. Pecore, R. 1688.)

Mr. BLACKMAR. Q. I call your honor's attention that this rock and this spring is set forth down there on the left-hand side of Plaintiff's Exhibit 3, giving these elevations. We haven't the rock on there yet. If you don't object, we will put it on. (R. 1688.)

Mr. LILJEQVIST. That is all right. I want all the information we can get. (R. 1689.)

Redirect examination:

I never saw the lake backed up over the rock in the Sodhouse (Springer's) Spring. I never did. (R. 1703.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff, testified in substance as follows:

I went down yesterday with some of these other people to look at that rock (in the Sodhouse Spring.) I had seen that rock before that (R. 1708); I would not remember what years I have been down there, but I never saw that rock under water, to my recollection. I have seen mud hens, ducks, and geese sitting on it, not all at one time, though.

I have passed there several times (in years gone by), but I never did see Malheur Lake back up and cover that rock. (R. 1709.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I did not go to Springer's Spring (Sodhouse Spring) so very early in the early days; I think I was at the Sodhouse Spring in the 80's. (R. 1805.)

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

I think I know about the rock down there in the (Sodhouse or Springer's) spring. I have inspected it in the last few days.

Mr. BLACKMAR. Q. Since you have lived there have you ever seen the lake get up and cover that rock?

A. No; I never saw the water from the lake back up there.

Q. But there has been water around this rock?

A. Well, the water, when the (Blitzen) river is high, that spring is higher. The water stands higher in the spring, and I have seen the water up pretty well on that rock.

Q. Is there a dam in there some place around that rock?

A. No.

Q. Well, what holds the water up around this rock?

A. When the (Blitzen) river gets high this spring is close to the river, or the river close to the spring, and when the (Blitzen) river is high it raises the water in the spring, but I never saw the lake back up there. There is always a current in that river below the spring ever since I knew it.

I have seen the water around that rock every year, but it is higher when the (Blitzen) river is high; the water is higher on that rock. (R. 2022, 2023.) I never did see that rock covered with water, but it would be up pretty well on the rock when the (Blitzen) river is high. Any year that the (Blitzen) river is high, why the water stands up pretty well on that rock.

SPECIAL MASTER. When there is water at the spring, no (R. 2023) matter where the waters of the lake are, is that right?

A. Yes, sir.

Mr. BLACKMAR. Q. And the waters of the lake, then, haven't anything to do with the waters in this spring?

A. I don't think so. (R. 2023.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with the Sodhouse Spring, and I think I am with the Spring Branch. I am also familiar with the Blitzen River.

Mr. BLACKMAR. Q. With special reference to that particular locality, and the movement of the water, will you tell me just what you saw up there prior to 1890?

A. When I first saw the Sodhouse Spring it was about, perhaps, the 12th of June, 1885. At that time I camped there for one night

only, and I didn't take any particular observation, except from the head of the spring. Looking from the head of the spring down what is known as the Spring Branch, or the Blitzen River, you could see the water leading out through tules and growth of other kinds toward the open body of water that led farther east, and at that time I did not examine that spring or water leading from it with reference to determining whether or not there was a current. In other years, or perhaps that same year, I noticed that there was a perceptible current in this channel leading down toward the Culver Marshall place.

Q. Is that current that you have referred to present there at all seasons of the year?

A. As far as I know. I have never examined it. I have crossed that channel below the (Sodhouse) Spring, and there is a considerable difference. Any place that I have seen, or noticed water in that channel, it was moving north or northeasterly toward the (R. 2183) open water (R. 2184).

I think that has been true in high water, as well as in low water; although I will say that perhaps two years I was not down at that spring (Sodhouse or Springer's Spring) during the high water. Those years were 1894 and 1897. (R. 2184.)

Mr. JOHN MARSHALL, called as a witness for the plaintiff, testified in substance as follows:

I did not get to see that rock in the (Sodhouse) spring during the last few days. I did not examine that rock in the spring at all, but I know of it all right. I have seen it a good many times.

I do not believe I have ever seen that rock covered with the (Malheur) lake waters. The rock was always sticking out at the time I saw it. The lake does not get up there. That is up at the Spring Branch, at the mouth of the Blitzen River. That water is always running up in there. The (Malheur) lake does not back up there.

There has never been but one dam in the Spring Branch that I know of, and that was a dam that George Marshall put in there, and he afterwards used it as a bridge; there was a lot of brush and (R. 2235) manure and stuff that he had in there. Now, when he had that in there I don't know. That dam would not raise the water back up to the rock; the rock was back up the stream farther; that rock was a half mile above that (dam). No; that would not raise that water up to that. (R. 2236.)

Mr. GEORGE M. BENSON, called as a witness for the defendant testified in substance as follows:

I am familiar with the Kado Dam. (R. 2523.)

There was not more than one dam on his place during my time; I do not remember of any; I do not remember of any other dam known as the Kado Dam; Kado's place is located just a little south of our place; Kado's Dam is south of my cabin, and it is on deeded

land in the Blitzen River. The purpose of the Kado Dam was to flood his fields.

I do not know how much higher the Kado Dam was above the banks of the Blitzen River; a foot or so in different years. Some years it was higher.

I have observed the effect of the Kado Dam on Springer's Spring; it backed the water up and raised it; I have seen it back the water up there every year, about two feet.

Mr. LILJEQVIST. Q. In order for the Kado Dam to back water into Springer's Spring, it would have to back water in the entire lake, wouldn't it? (R. 2524.)

A. No, it would not touch the lake at all. You mean water that backed up from Kado Dam?

Q. Yes.

A. It would back up in that channel, that's all.

Q. It would run over to the sides, wouldn't it, spread out?

A. It would run up to a certain level and then break over. There was a bar pit along that road that takes the water off.

Kado didn't have any dam in there when I moved into the country (R. 2525); there was evidence of a dam in that (Blitzen) river, some old stakes and a log in the river there some place; it had not been used for a long time.

I do not remember seeing the water mark on the rock in Springer's Spring when I first came to the country. (R. 2525.)

b. Elevations

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The elevation of the top of the rock, is 4,095.7 feet, and the top of the highest water mark on the rock in 4,094.6 feet; the difference between 4,095.7 feet and 4,094.6 feet being practically 1.1.

The elevation of the ground at the base of the rock is 4,093 feet, even.

The level of the ground at the spring is lower.

I have not been able to get the elevation of the dam. (R. 1688.)

15. Applications of settlers to State Land Board

a. To purchase lands within Malheur Lake

Mr. JOHN W. BRIGGS, called as a witness for the plaintiff, testified in substance as follows:

The next time I saw Malheur Lake was somewhere between 1902 and 1903; do not remember the year exactly. (R. 1488.) A number of people who were living within the Neal meander line on the (R. 1487) west part of Malheur Lake, came to me to make applications for them to secure—purchase this from the State as swamp land. I think Mr. Campbell came to see me.

I went down, and the State Land Board refused to make a survey, and said that they would not consider any applications unless a survey was made. I came back then, and while I didn't meet all of them personally, I had employed Mr. Frank Jordan to make the survey, and he went to see all of those and secured their applications, and we had the survey made at that time, and I was down there quite a number of times during the survey from about the mouth of the west fork of the Silvies River across to near the Alva Springer place. All of the west part of the lake from there we had surveyed, and I took the survey and the applications for all of that to the State Land Board.

I do not know where that survey is now. (R. 1488.)

Mr. BLACKMAR. Q. Do you know where it is, Mr. Liljeqvist?

Mr. LILJEQVIST. No; I don't. No official action has ever been taken.

The WITNESS. They returned all the applications and survey and refused at that time to entertain any. They gave me a reason why they refused to entertain any.

Mr. LILJEQVIST. It is immaterial and not binding in this lawsuit. (R. 1489.)

The WITNESS. The reason was set forth in a letter, but I do not know where the letter is now. That was 27 or 28 years ago. I do not know that I have seen the letter. I probably gave the letter with all that to Mr. Jordan. He had made the survey, and I probably just gave it to him to show to the people down there.

The last time I saw Mr. Jordan was in 1918. He moved to The Dalles, and I understand he is now dead. (R. 1489.)

Mr. BLACKMAR. Q. Now, will you state, please, what were the contents of that letter?

Mr. LILJEQVIST. Now objected to—let me ask a preliminary question. Was that letter from the clerk of the land board?

A. No; it wasn't. It was from Mr. Gear, who at that time was the State Land Agent.

SPECIAL MASTER. We will take the testimony, and I will rule on it later.

Mr. LILJEQVIST. To save the record, I object on the ground it is incompetent, irrelevant, and immaterial, and not binding on the State of Oregon, and besides it is no issue involved in this case, for the reason that Mr. Gear had no authority, statutory or otherwise, to bind the State of Oregon.

Mr. BLACKMAR. Q. Now, will you state the contents of the letter?

A. I would not attempt to give it in detail at all, but it was practically to the effect that the State had selected some of the school sections which would have been within Malheur Lake if it had been surveyed to use them as a base for other lands—use them for the selection of indemnity school lands. (R. 1490.)

SPECIAL MASTER. Is that letter in the archives at Salem?

Mr. BLACKMAR. We have not been able to locate that letter, and we have not been able to locate a copy of this petition or this survey. However, we will prove before we are through that the State of Oregon did make some lieu selections. (R. 1490.)

SPECIAL MASTER. That is, it did the act which the witness says Mr. Gear recited that the State had done.

Mr. BLACKMAR. That is correct, Your Honor.

Q. And with the receipt of that letter, why that closed the matter, did it, as far as you were concerned?

A. It closed it as far as I was concerned, and I think I gave him back—gave to Mr. Jordan all of the applications, and the survey and the letter.

Those who filed applications included three by the name of Jordan; their father lived in section 16, T. 25 S., R. 32½ E. Three or four of the boys filed close to that. Dan Jordan filed just north. John Jordan filed adjoining the lake, or right near the lake, I think about two miles southeast of there. He attempted to file but found that there were two lots between his filing and the lake, and I purchased those two lots as isolated tracts.

There was a bunch of them (settlers who made application) who are not here now. (R. 1491.) One of them was a man by the name of Balcroft who was working for Mr. Venator down on Swan Lake (adjacent to Malheur Lake).

I did not go down to the (Malheur) lake and confer with those settlers. The only time I was down there was conferring (R. 1492) with Mr. Jordan while he made the survey. The applications were prepared in the (my) office but Mr. Jordan, the surveyor, brought all of those applications to me. When I was down there (Malheur Lake) with Mr. Jordan, I met a good many of those people. I met Mr. Campbell, but I would not say that Mr. Campbell signed that application. I met Mr. Scott Haley and talked with him some at the time. I would not say that Mr. Haley made the application for this reason: There were two or three parties who were fighting this to a certain extent, claiming that they owned lands on the meander line, and that by reason (thereof) owned clear into the center of the lake, and were fighting the applications for the swamp or overflowed lands. (R. 1492.) Mr. Jason Bennett was not there at the time; he was living at Harney then.

I do not recall whether I saw any of the Vickers there at that time, but I would not be surprised if one of them had applied, or some one of them had applied for a swamp land. I am not certain. I would not say as to Tim Crowley. I think Ed. Grout was down there at that time.

I saw those settlers there in their houses down in the lake, but I discussed very little with them. My dealing was with Mr. Frank Jordan principally.

Mr. BLACKMAR. Q. What I am getting at is: Those people at that time were actually living in houses?

A. Oh, yes.

Q. On the land that you sought to get from the State of Oregon as swamp land?

A. Yes.

Q. They were living there? (R. 1493.)

A. Some of them were, yes.

Some of them had their homes there, livestock, implements, and one thing or another, but I would not say that all of them did.

The parties who were defendants in the suit with the French-Glenn Company lived right along the south side of the lake where the Blitzen (River) comes in. There were a number—several of the Marshalls, Mr. R. T. Hughet, Mr. Alva Springer, and Mr. Jim Caldwell, and a whole bunch of them who lived right in there that were the ones that I served in 1894. That was a different controversy. They lived between the Neal meander and the old meander line (of 1877). (R. 1494.)

Cross-examination:

Mr. LILJEQVIST. Q. The net result of what you have testified to is the State of Oregon refused to attempt to permit this to be selected as swamp land?

A. Yes; that is, the State Land Agent was the one who refused.

Q. You don't know whether he conferred with the State Land Board or not, do you?

A. Any further than this: That on one of the trips that I was there, we had a full meeting of the Land Board, and I talked the matter over with all of them then.

I can not give you any more definite date than that it was between 1902 and 1905, as near as I can remember. (R. 1496.)

There was a meeting of the Land Board. We were altogether there; that was quite a while before I received that letter; that was when I first made the application, and they refused to consider those without I submitted a survey with it.

Mr. LILJEQVIST. Q. And then you did submit a survey, and the only thing you know the State Land Agent answered you by letter and turned the matter down?

A. Yes.

Q. You don't know what official action, if any, the State Land Office took at that time?

A. No.

Q. You have never checked that up?

A. Yes.

I do not know who was Governor, State Treasurer, and Secretary of State as far as the Land Board was concerned.

SPECIAL MASTER. Did they constitute the Land Board?

Mr. LILJEQVIST. Yes. (R. 1498.)

During that time you would make an application to buy a piece of land as indemnity school land. The State charged you two and a half an acre for the land. Mr. Chamberlin charged you from two to three dollars an acre to furnish the base upon which to get that

land. So that the applications that I made for those parties were to the State Land Agent; then he got the base from Mr. Chamberlin.

I could not tell you whether unsurveyed lands can be used as a base for indemnity school lands. I never went into that at all. (R. 1498.)

Mr. LILJEQVIST. Q. As a lawyer, you understand sections 16 and 36 of each township inure to the State of Oregon as State lands under Federal legislation from the earliest days. This (R. 1498) map has been introduced into evidence, which the Government has introduced, showing the lands patented around the lakes, and it has been testified that these lands that are uncolored are Government lands. Now, isn't it a matter of fact, as a lawyer, you know a portion of these lands in section 36 that were surveyed, and section 16, which was surveyed around these lakes, became State (R. 1498) lands, and it wasn't necessary for a patent to issue from the Government?

SPECIAL MASTER. Aren't you doing the same thing that you objected to?

Mr. LILJEQVIST. No. They offered a map here, which they claim shows all the patents.

SPECIAL MASTER. You asked if he, as a lawyer, knew. If it is the law, you, as a lawyer, know it.

Mr. LILJEQVIST. I was trying to check up the accuracy of the plat. (R. 1499.)

b. Application of State for lieu or indemnity lands

Mr. JOHN W. BIGGS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. You do not know at all, of course, whether the State of Oregon ever applied for any lieu or indemnity lands, using as a base anything inside Malheur Lake?

A. I know they applied for it, because I applied for some of the lands here for parties; some of the base afterwards they sent me, and it was turned down by the Government, and I had to supply them with other base. (R. 1497.)

Q. And the Government turned it down on the basis that, of course, it wasn't land at all, but it was lake?

A. I don't know; I don't remember now at this time. (R. 1498.)

STATE OF OREGON

OFFICE OF THE CLERK OF THE STATE LAND BOARD

I, G. G. Brown, clerk of the State Land Board of the State of Oregon, and custodian of records and seal of such board, do hereby certify that in company with Randolph S. Collins, Attorney, Department of Justice, I examined the files of the State Land Board Office for the years 1902 to 1905, inclusive, and was unable to find any letters from Frank K. Jordan or John W. Biggs, relative to the survey of Malheur Lake.

In testimony whereof, I have hereunto set my hand and affixed hereunto the seal of the said board. Done at the capitol, at Salem, Oreg., this 9th day of April, 1932.

[SEAL.] (Signed) G. G. BROWN,
Clerk of the State Land Board.

16. Exhibits—Identification, description, and explanation thereof

a. Plaintiff's Exhibit 36;

Photograph, Reinemann place and vicinity

Mr. A. A. REINEMANN, called as a witness for the plaintiff, testified in substance as follows:

I recognize that photograph (Plaintiff's Exhibit 36, R. 1669). As near as I can remember it was taken about 1895. That photograph has been in our family a long time.

Mr. BLACKMAR. The original exhibit, Your Honor, we desire to withdraw that, and we will furnish a photograph of this. It belongs in his family, and he wants to keep it.

I can give you the approximate position of the camera when that picture was taken. (R. 1667, 1668.) This part where you see the chimney is the kitchen. It is due north of the main house; looking straight north from our house. The main house runs east and west; it is on the ridge of the main house looking over the kitchen. The kitchen set quite a bit lower, looking straight north out toward Wrights Point.

Mr. BLACKMAR. Q. How far in yards or feet is the Neal meander line from that point from your house?

A. Just about—that place is two quarters wide; that would make a half mile.

It is a half mile to the northeast corner. That is where it crosses, you see, the northeast corner down there.

Mr. BLACKMAR. Q. The haystack which is farthest to the right of the picture, can you tell whether or not that haystack is above or below the Neal meander line?

A. That is below.

Q. Below the Neal meander line? (R. 1668.)

A. You can see the fence running right along here. That is a fence. It runs on a line here.

Q. You are indicating a line in the right-hand corner of the picture?

A. Yes.

Q. That is the approximate location of the Neal meander line?

A. That is as near as you can tell. (R. 1668.)

The vegetation on the area shown on the picture here between the house and the largest haystack, was mostly salt grass. That largest haystack is not very far from our house; I should think about 250 feet.

Over here to the left-hand side of the picture immediately to the left of the cattle, is a hay rake (used for raking hay).

(Thereupon Plaintiff's Exhibit 36 was offered in evidence and marked by the reporter.) (R. 1669.)

Cross-examination:

That picture (Plaintiff's Exhibit 36) must have been taken between August and September (R. 1674) about 1895 (R. 1667).

That is that year's haystack (shown in the picture).

I could not say who took the picture, but Mr. Springer would know.

I stated that there is a fence line in the northeast corner of the picture.

Mr. LILJEQVIST. Q. And it angles back toward the haystack. As it angles back to the haystack, you are not referring to that part of the fence?

A. No.

Q. Just beyond the fence line in the northeast corner there seems to be a dark heavy strip on the picture. What is that?

A. I think that is the way the light struck the tules out there. (R. 1674.) Just hay land.

I imagine that little strip on the picture, at the northeast corner of it, right above the fence, about an eighth of an inch in width there, and extending westerly to the center of the picture, is tules and flags. That is what it looks like the way the light strikes it there. It is darker than the rest of the picture here. That is my recollection of what it was, tules and flags; there is sugar grass and wild hay down there. The tules were not very high.

Mr. LILJEQVIST. Q. The picture is all out of proportion, is that what you are trying to tell us?

A. No; that is the way the light strikes it.

Q. How do you know that is the way the light strikes it?

A. I have been there and looked and saw how it looks. Get on the other edge and look north toward the lake, and those tules and flags are always looking darker than the rest of it.

That is the tule and flag belt. (R. 1675.)

That fence there, the way it is shown on the picture, is not on a (meander) line. The (meander) line starts at a point at the northeast line and runs north. Since then we moved the fence back on the meander line. There was maybe 300 feet on this west quarter that had to go back to the meander line. There was kind of a dark piece there [referring to photograph].

Mr. LILJEQVIST. Q. Where is the meander line with reference to the haystack, beyond it? (R. 1676.)

A. No, the haystack is on down farther.

Q. Down farther?

A. Yes.

I mean that haystack is beyond the meander line, on the Woodcock place.

The dark spot between two haystacks, and to the left of it, is just a salt-grass ridge. It is not vegetation on the banks of a slough;

there would be no slough there; just shallow sloughs, but not a big one.

Mr. LILJEQVIST. Q. According to this map the water is a foot deeper than the meander line, if correct?

A. What?

Q. I am talking about the map. It shows the water is a foot deeper between 93 and 92, north of that meander line, and yet you tell me that there is no depression below the meander line. (R. 1676.)

A. Not noticeable.

Q. What do you mean by not noticeable?

A. I would not notice it, and you would not notice it, unless you had a level along. (R. 1677.)

b. Plaintiff's Exhibit 37—Photographs of certain areas on the south side of Malheur Lake

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. I show you Plaintiff's Exhibit 37, Mr. Springer, and ask you if you can identify this photograph? Start over here at the left-hand side and go across to the right, and just describe this photograph.

A. [Starting over at the extreme left portion of the exhibit.] There is part of that picture that lays south of my place, across the road on the [Eastern Oregon Livestock] company land, in what they call the bull field; and this place up here, that is where we used to live (my place).

That is my place (R. 2023) in about the center of the left third of the picture.

In the left half of the left third of the whole picture is what looks like hay bunched there.

In the left third of the picture I think probably the house right in there, the way it looks to me, was west of my place, what they call the Caldwell place, where Mr. Dunn lives now. That is the way I figure it out.

In the right center of the first third of the picture is Mr. Hughet's house, where Mr. Hill lives now, and then the next house east of that, I think, is a place they call the Simmons place; it should lay north of this place.

Mr. LILJEQVIST. That is the Caldwell place? (R. 2024.)

A. In here more [indicating]. This picture is quite strung out this way some. (R. 2025.)

In the first third of the picture there is no land shown in there just below the Neal meander line until you get way back in there, north of those houses; from this house, the right-hand house in the left one-third of the picture, I would say half a mile back; something like a half mile back from that house.

Mr. BLACKMAR. Q. That is the Hughet house?

A. Yes; probably a little over; this house set back in the field here [indicating].

SPECIAL MASTER. That is the left half of the left third of the picture.

Looking at the first third of that picture it looks to me like the picture was taken in hay time, and that looks like a bunch of hay to me, and that haystack does not look like it is finished.

Mr. BLACKMAR. Q. Now, take the center third of the picture. Where was that taken? (R. 2025.)

A. Well——

SPECIAL MASTER. This is the right third; that is the center third; and you have passed the left third [indicating].

A. These pictures over on this end are all as plain as day to me, but when you get up in here——

SPECIAL MASTER. You mean the picture on the right third of the photograph is as plain as day to you?

A. Yes.

SPECIAL MASTER. They are giving you the hard third there, Mr. Springer, in the middle.

A. These pictures, the way as I remember it was taken off, (R. 2026), there is a hill back south of this spring, and this man taking these pictures was up on the side of that hill. They show them pictures plainer than they do there over here.

Mr. LILJEQVIST. To the left.

A. To the left.

SPECIAL MASTER. You might try the right third first.

A. Then he took this view, and then he took that view, and turned the camera to the left.

Mr. BLACKMAR. Let's take this right third over there. Tell me what is in that picture.

The water over there is water in the spring. (R. 2026.)

In the right half of the right third of the picture there is the rock right there (the Sodhouse or Springer's Spring).

Mr. LILJEQVIST. About an inch from the gate.

This gate is not on the ranch. It is up on the side hill, on what is known as the (Eastern Oregon Livestock) company land. These corrals here, and this old Sodhouse, are on the company land. The Sodhouse is practically on the dividing line between the right and left halves of the right third of the picture.

At the extreme right of the picture, slightly below a line drawn below the top and the bottom of it was a company house; when we came to the country that house set there. That is right back of the head of the (Sodhouse or Springer's) spring where it comes down. (R. 2027.)

In that part of the picture the land north of the Neal meander line is way down in the picture; I would think it was down on the far side of it; it is rather indistinct anyway, back in there [indicating]. (R. 2027, 2028.)

In the center panel of the picture is part of my ranch. This haystack here and that one there is on our place. The haystacks are

near the right line of the middle panel of the picture. And there is one (haystack) over there across the (Blitzen) river. That is on our place.

Mr. BLACKMAR. Yes; it is marked up here in red ink "Alkali Patch."

SPECIAL MASTER. That is in the left half of the middle panel.

Mr. BLACKMAR. Yes.

A. That is on the company land just south of the river, where the river comes down.

We did have alkali patches around there on quite a number of places, but not as big as that one. That is quite a big place there.

The land there at the place where it is marked "Alkali Patch" (on the picture) is not subject to back-up water from Malheur Lake. (R. 2028.) It is not subject to irrigation from any place.

Mr. BLACKMAR. Q. Do you know where the old Meldrum meander line is? Do you know the location of it?

A. Yes.

SPECIAL MASTER. Now, you are going to start at a certain point and travel to the left of the picture.

Mr. LILJEQVIST. Travel west.

A. Going west from this spring——

SPECIAL MASTER. The spring being near the right-hand (R. 2029) line of the right third of the picture.

A. It followed this bank of the spring around here to a point in here to the southwest corner of the spring, and then it went north and went down and across the river, and then it turned west and crossed right back across the river and went up through this country, and that haystack is right north——

SPECIAL MASTER. In the right-hand portion of the middle panel.

A. And then followed up this country. I did not get this lined up here very good [indicating]; anyway, it went north of what is marked "Alkali Patch" here. It went north of that, and it went through on west, and it followed right up—there is a lane through there nowadays, right on the line, supposed to be (R. 2029), and from then on clear across west.

I do not remember exactly the date when that picture was taken, but that is an old picture. I would say it was better than 30 years old; probably 34 or 35.

Mr. BLACKMAR. Now, Mr. Liljeqvist, it is agreed between you and me that this picture may be reproduced, and a reproduction substituted in the place of the original.

Mr. LILJEQVIST. Yes. You offer the original now?

Mr. BLACKMAR. I offer the original in evidence.

The way I remember it, these pictures were taken to get that country surveyed, to be used for that (purpose), and this picture was on our place a long time after these things happened; then we gave them (the pictures) to Mr. Reinemann, who lived in Pasadena, California. He was up on a visit one time talking about it, and he

said he would like to have them for awhile; I told him that they belonged to him just as much as they did anybody, and just take them and keep them; later on I got them back here some way. (R. 2030.)

I am not sure whether the picture was taken before or after the running of the Neal meander line (in 1895).

Mr. LILJEQVIST. Was it taken in connection with that litigation of the French-Glenn Company against you and Caldwell?

A. Well, I don't know. In the suit for the land, do you mean?

Q. Yes.

A. The way I remember it, this land was all settled on, and it was unsurveyed, and the people, they were trying to get a survey on that land, a Government survey.

SPECIAL MASTER. That is below the Meldrum line?

A. Below the Meldrum line.

SPECIAL MASTER. The question now is whether they had obtained a survey and the Neal line had been run before the photograph was taken.

A. Well, now, I couldn't say, but they tried to get that Neal, as I remember it, that Neal line—well, in other words, they did not think he surveyed all he ought to. And just what time that was taken I don't remember. (R. 2031.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, in this picture that has been marked "Plaintiff's Exhibit No. 37," the land immediately to the (R. 2036) west of the spring, which is in the right-hand panel, that was your father's homestead; that is correct, isn't it?

A. Yes.

Q. And then John Marshall's homestead was immediately north of your father's?

A. Yes.

Q. All right. Now, can you tell me on this picture, this exhibit, where your homestead was that you have been referring to? Is it anywhere in the center panel, or which of the panels? Can you tell?

A. Well, I think the line would be right in here some place.

Q. Let's get this straight again. Your homestead house, that is your house, upon your own homestead, is which one? You pointed it out. I want it identified again.

A. That is the trouble with that picture, it is strung out here.

Q. It is on the bias, is it?

A. Yes; that shows my homestead house up in that picture, up off in there.

Q. Your homestead is the house practically in the center of the left panel, being the left one-third of the picture, is that correct? (R. 2036.)

A. The left house, Mr. Liljeqvist—my homestead was a mile long, east and west.

Q. Yes.

A. And that house is close to the middle, running east and west [indicating].

The old Meldrum line (of 1877) was about a couple of hundred yards south of my house; something like that. (R. 2037.)

SPECIAL MASTER. May I ask, is it the fact that the left-hand third of that picture covers your homestead, and only your homestead?

A. No; you get some land south of the road here in this company field, where this hay is [indicating].

SPECIAL MASTER. But east and west does it cover?

A. Immediately west, yes.

The haystack immediately to the left of the picture is not on my land; it runs farther to the west of that haystack. If I have it located right, that (haystack) is over in here, in what they call the bull field. From the company land that looks to be brush on the point of the hill. My place is over here [indicating].

Mr. LILJEQVIST. Q. To get this straight, the road and the old Meldrum line (of 1877) (R. 2037) were a couple of hundred yards south of your house?

A. Of that house.

Q. Yes; and that would be in the picture a short distance below the house toward the bottom of the picture; a short distance below the center?

A. Yes.

Q. Then let's get over here to the right one-half of the left panel, or the left one-third. There seems to be a field right in the center of the picture immediately below something marked in red. Let's see what that is.

SPECIAL MASTER. The alkali field?

Mr. LILJEQVIST. No, that is way over there. I don't know what the red is. Maybe you can interpret it. Well, there is (R. 2038) some writing in the center of the right-hand half of the left panel which is in red ink, and seems to be blurred. Now, can you tell with reference to that field, immediately below that road, where the Meldrum line ran?

A. That letter looks to me like "Cane Patch," Mr. Liljeqvist; this picture, the way I understand it, the camera is set up here and shot kind of down that way on it [illustrating].

Q. Shot towards the northwest?

A. That strikes them out here [indicating].

Q. The camera was on the hill back of the spring some place, back of the Sodhouse?

SPECIAL MASTER. South or southeast, would it be?

A. The picture would be pointing northwest.

Mr. LILJEQVIST. Yes. (R. 2038.)

A. And this cane patch, if that is what it is, belongs farther over, way over there in the swamp marsh in north and west of that house, the way I remember it, but taken in this picture it looks as

though it is east; and if that is what that is, the cane patch, it should belong over there more.

Those houses that are in the west panel of the picture, are on lands which subsequently became surveyed lands between the Neal (meander line of 1895) and the Meldrum line (of 1877).

Mr. LILJEQVIST. Q. All the buildings on these pictures, for instance this building here, that is an inch and a half from the alkali patch in the center panel, so that is between the Neal and the Meldrum lines?

A. Yes. (R. 2039.)

Q. And likewise, the building over at the right-hand side of the center panel, that is between the lines?

A. I think that was a haystack.

Both of those haystacks on the extreme right of the middle panel (of the picture) are on deeded land.

Mr. LILJEQVIST. Q. And now with reference to the (Blitzen) river—where it is marked in red in the center panel—where did the Meldrum line run?

A. It went down this way south of it. (R. 2039.)

Q. South of it. And north of this open field in which the alkali patch is situated?

A. North of that alkali patch; yes.

Q. And right near the river there?

A. Oh, not right up against the river; no.

Q. I mean close to the river.

A. Close to the river.

Q. About how far?

A. That represents a river, doesn't it, these tules and things along there [indicating]?

Q. Yes.

A. And it is not the same distance. This island varies.

The haystack in the right-hand side of the center panel of the picture is just north of the Meldrum (meander) line (of 1877).

The road is not graded there by the haystack. The road left the (Meldrum) meander line back here [indicating], after they crossed the bridge on the main (Blitzen) river where that was. (R. 2040.)

Mr. LILJEQVIST. The river is shown in red (on the picture). The bridge is not shown on it.

The bridge is not shown; and it came across this alkali country here, up this way; and it left the (Meldrum) meander line down (R. 2040) there.

Mr. LILJEQVIST. Q. Now, take the right-hand panel: Is the present Sodhouse Lane, as it is called, between this Sodhouse and the posts—post fence that is immediately north of it, or was the road to the north of that fence?

A. That fence was a big corral on the company land that the company used to use, and the road nowadays runs just north of where

this Sodhouse sets; that old Sodhouse was torn down. It runs just on the other side from there, and it comes up right around here [indicating].

SPECIAL MASTER. Indicating to the right of the picture.

Mr. LILJEQVIST. That is the Chapman and Weaver Sodhouse, so-called; frequently called the Chapman Sodhouse, wasn't it?

A. I ain't sure about that—who built it or anything about it.

Q. Now, these houses on the right-hand panel, to the extreme right, they are between the Meldrum and the Neal lines, aren't they?

A. Yes; this house right here, Mr. Liljeqvist, that is where my father lived [indicating].

Q. Right above the right-hand corner of the spring there?

A. Just east of the spring. Here is the spring, this water [indicating]. There was his barn down there [indicating].

SPECIAL MASTER. Indicating what, Mr. Liljeqvist?

Mr. LILJEQVIST. The building at the projection of the (R. 2041) spring, about three-fourths of an inch below the red line; red printing, called "Lake Malheur."

SPECIAL MASTER. And east of the center line of the right-hand panel.

Mr. LILJEQVIST. Yes, sir. That is your father's barn?

A. Yes, sir; when this picture was taken; and this house over here, that is known now as the Kado place. George Marshall proved up on it. It was a homestead, but Kado lives there now.

The little house right in there—the northerly house in the right-hand half of the right panel—to the extreme right of the panel (of the picture) is a schoolhouse, and the old Meldrum meander line (of 1877) runs just west of that, where that little house sets there; not below the Kado house, south of the Kado house; I don't remember exactly how far.

The Kado house was in existence when my father had his homestead there, but it was the George Marshall homestead. He lived down there. (R. 2042.)

17. Assessed valuation of lands

a. Deeded lands—Malheur Lake

Mr. JAMES J. DONEGAN, called as a witness for the plaintiff, testified in substance as follows:

With reference to the assessed valuation of these deeded lands around Malheur Lake, at the present time, the land has been reclassified this year, the first time since I classified in 1909, and I am not familiar with the present assessed valuations, but at that time I assessed lands around the border of Malheur Lake, depending of course on the value of the land, from $1.50 minimum as high as $15 maximum where it was land that had been cut for hay and was producing a crop of commercial hay. Of course, that varied,

that assessed valuation varied according to the class of the hay. Some parts of it produced a better class of hay, and therefore I assessed that land at a higher valuation.

I think that the reclassifications upon the better quality of lands have been increased over the valuation that I had on in 1909, but what the maximum value is I am unable to (R. 1532) say.

Mr. BLACKMAR. Q. Now, on the north side of the lake, are you familiar with that particular section that might be termed the delta of the Silvies River?

A. Just in a general way, yes.

All lands that were deeded were classified; at that time (1909) we went upon all lands. From memory I would say that (R. 1533) the lands up there in the delta of the Silvies River bore a higher classification than the other lands around the lake where they were producing hay.

That is also true of the lands near the mouth of the Blitzen River. (R. 1533.)

Cross-examination:

I first knew those lands in detail in 1909. I knew them in a general way ever since I have been in the country.

Mr. LILJEQVIST. Q. In '95, 10 years before that time, the lands around that lake were of less value still, weren't they? (R. 1533.)

A. I presume they were.

Q. You classified the best lands around the lake in 1909 as $15 an acre?

A. That is my recollection from memory.

Q. Did you attempt to run around the Neal line at all in those days?

A. Why, wherever lands were—yes, that is where the lands were patented or connected up. (R. 1534.)

18. Ownership by county and State of lands adjacent to Malheur Lake

SPECIAL MASTER. I asked Mr. Liljeqvist how it happens that on some of these maps Harney County appears to be the owner of land, also the State of Oregon, outside the 16 and 36 sections, and he gave me an explanation which I would like to have him state now, so that it will be carried into the record.

Mr. LILJEQVIST. The acquisition of the lands by Harney County arises, as I am informed, by the foreclosure of tax-delinquency certificates, and under which the county acquired title and a tax deed by the failure of the payment of taxes on such surveyed lands shown on the map. The title of the State of Oregon to the surveyed lands around the meander line shown on the map, I am informed, arises by reason of the foreclosure of State Land Board mortgages, which mortgages were given to secure moneys loaned by the State of

Oregon from the irreducible fund to such owners around the lake, the owners giving a note for substantially six per cent, secured by a mortgage upon their land, and then upon the failure of the payment of the note and mortgage the State was compelled to foreclosure through the State Land Board, and on such foreclosure secured deeds on sections on mortgage foreclosure. (R. 2007.)

STATE OF OREGON,
Office of the State Land Board,
Salem, April 11, 1932.

RANDOLPH S. COLLINS, ESQ.,
P. O. Box 450, Marshfield, Oregon.

DEAR MR. COLLINS: I am enclosing certified copy of letter from Commissioner of date Aug. 13, 1931, and certified list of State lands in townships bordering on Malheur Lake, and certificate as to base lands in Malheur and Harney Lakes.

Very truly yours,

(Signed) G. G. BROWN,
Clerk of State Land Board.

GGB:W.

(All are foreclosed farms unless otherwise stated)

T. 25 S., R. 30 E.,	Sec. 28	NE. ¼, N. ½ NW. ¼, N. ½ SE. ¼	320 acres.
	33	S. ½ SE. ¼	80 "
	34	SW. ¼ SW. ¼	40 "
31 E.	4	S. ½ NE. ¼, Lots 3 and 4, SE. ¼ NW. ¼, N. ½ SE. ¼	278 "
	26	NW. ¼	160 "
	33	N. ½ SE. ¼	80 "
	34	SW. ¼	160 "
32 E.	27	NW. ¼	160 "
	33	E. ½ SW. ¼, SW. ¼ SE. ¼, Lots 4, 5	157 "
32½ E.	11	NW. ¼	160 "
	23	Lots 2, 3, S. ½ NE. ¼, NE. ¼ SE. ¼	160 "
33 E.	2	SE. ¼ SE. ¼	40 "
	3	Lots 3, 4, 5, 6	160 "
	13	All	640 "
	14	NW. ¼, W. ½ SE. ¼	240 "
	21	SW. ¼ NE. ¼, N. ½ NW. ¼, SE. ¼ NW. ¼	160 "
T. 26 S., R. 30 E.,	Sec. 3	SW. ¼ NE. ¼, NW. ¼ NW. ¼, S. ½ NW. ¼, SW. ¼, W. ½ SE. ¼	400 "
	4	NE. ¼, N. ½ SE. ¼	240 "
	10	NW. ¼ NE. ¼, N. ½ NW. ¼	120 "
	11	NE. ¼ SE. ¼, S. ½ SE. ¼	120 "
	12	E. ½ NE. ¼, N. ½ SW. ¼	160 "
	14	N. ½ NE. ¼	80 "
T. 26 S., R. 30 E., S. of lake	26	Lots 6, 7, 8	59 "
	27	Lots 1, 2	11 "
	34	Lots 1, 2, 3	94 "
	35	Lot 8	50 "

T. 26 S., R. 31 E., N. of lake Sec.	6—NE. ¼ SW. ¼, Lot 3, N. ½ SE. ¼	160 acres.
	10—NW. ¼	160 "
	18—NW. ¼ SE. ¼	40 "
	21—SW. ¼	160 "
	22—W. ½ SW. ¼, NW. ¼ SE. ¼	120 "
	26—NE. ¼ SW. ¼, S. ½ SW. ¼	120 "
	27—Lot 1	33 "
	35—Lots 1, 2	14 "
T. 26 S., R. 31 E., S. of lake	(Nothing)	
T. 26 S., R. 32 E., N. of lake	"	
S. of lake	33—NE. ¼ SE. ¼	40 "
	34—N. ½ SW. ¼, NW. ¼ SE. ¼	120 "
T. 26 S., R. 33 E., Sec.	11—NW. ¼ SE. ¼, S. ½ SE. ¼	120 "
	14—N. ½ NE. ¼	80 "
	23—SW. ¼	160 "
	24—E. ½ W. ½	160 "
	34—NE. ¼	160 "
	35—N. ½ SW. ¼, SW. ¼ SW. ¼	120 "
T. 27 S., R. 30 E., Sec.	3—Lots 2, 3, 6, 7, 11, 12, NE. ¼ SW. ¼, NW. ¼ SE. ¼	240 "
	23—S. ½ NE. ¼	80 "
	36—W. ½, W. ½ SE. ¼	400 "
T. 27 S., 31 E.	(Nothing)	
T. 27 S., R. 32 E.	4—Lots 2, 3, 4, 5	143 "
	5—Lot 1	25 "

STATE OF OREGON

OFFICE OF THE CLERK OF THE STATE LAND BOARD

I, G. G. Brown, clerk of the State Land Board of the State of Oregon, and custodian of records and seal of such board, do hereby certify that the records of the State Land Board show deficits in school sections resulting from portions of the sections being below meander line and within the beds of Malheur and Harney Lakes, and used as base in the selection of indemnity lands are as follows, and that no other base has been used from any townships in which said lakes are located, to wit:

640.00 acres in	T. 25 S., R. 32 E.	Clear List	1,	Lakeview.
320.00 " "	T. 25 S., R. 32½ E.	" "	6,	"
67.37 " "	T. 26 S., R. 29 E.	" "	3,	"
133.42 " "	T. 26 S., R. 31 E., N. of Malheur Lake	" "	4,	"
286.58 " "	T. 26 S., R. 31 E., " " " "	" "	21,	Roseburg.
120.00 " "	T. 26 S., R. 31 E., " " " "	" "	8,	Burns.
160.16 " "	T. 26 S., R. 31 E., S. " "	" "	1,	Portland.
159.72 " "	T. 26 S., R. 31 E., " " " "	" "	22,	Dalles.
327.52 " "	T. 26 S., R. 33 E.	" "	4,	Lakeview.

In testimony whereof, I have hereunto set my hand and affixed hereunto the seal of the said board. Done at the capitol, at Salem, Oregon, this 13th day of November, 1931.

(Signed) G. G. Brown,
Clerk of the State Land Board.

19. No record that State ever asserted claim to Malheur Lake under Swamp Land Acts

UNITED STATES DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, Aug. 13, 1931.

In reply please refer to 1426160 " F " KH 1177028
:Status,

Mr. G. G. BROWN,
Clerk of State Land Board,
Salem, Oreg.

MY DEAR SIR: Reference is made to your letter of July 27, 1931, asking whether the State of Oregon ever made any attempt to select as swamp land, Malheur Lake in Harney County, Oregon.

After a search of the records, I am unable to find that the State ever asserted claim to the lands within the meander lines of the lake under the swamp land acts.

You are doubtless familiar with the decision in the case of Micelli et al. *v.* Andrus (120 Pac. Rep. 737, 61 Oregon 78), wherein the court held that the title of an abutting owner extended to the line of ordinary high-water mark of a navigable body of water, and to the center line of the bed of nonnavigable waters.

In the case of French-Glenn Livestock Company *v.* Springer (58 Pac. 102, 35 Oregon 312), Lake Malheur is mentioned as a nonnavigable body of water. See also 185 U. S. 47.

All smallest legal subdivisions which touch either Lake Malheur or Lake Harney and the streams and waters connecting these lakes, were reserved by Executive Order No. 929, August 18, 1908; for the Department of Agriculture as a preserve for birds, and called Lake Malheur Reservation.

Very respectfully,

D. K. PARROTT,
Acting Assistant Commissioner.

STATE OF OREGON

OFFICE OF THE CLERK OF THE STATE LAND BOARD

I, G. G. Brown, clerk of the State Land Board of the State of Oregon, and custodian of records and seal of such board, do hereby certify that the foregoing transcript of letter from D. K. Parrott, Acting Assistant Commissioner of General Land Office, of date Aug. 13, 1931, has been by me compared with the original of said letter on file in this office and is a true and correct copy thereof and the whole of said original letter and that according to the records of this office the attached list of lands are the State lands in all townships bordering upon Malheur Lake (all are foreclosed farms unless otherwise specified).

In testimony whereof, I have hereunto set my hand and affixed hereunto the seal of the said board. Done at the capitol, at Salem, Oregon, this 11th day of April, 1932.

[SEAL.] (Signed) G. C. BROWN,
Clerk of the State Land Board.

20. Plaintiff's Exhibits 46, A, B, and C, indemnity school selection lists

Plaintiff's Exhibits No. 46–A, 46–B, and 46–C, being indemnity school selection lists, Lakeview series, numbers 1, dated December 29, 1885; 3, dated May 23, 1887; and 4, dated September 21, 1887, which show, among other selections, those in which the base is given as Malheur Lake, and within townships included in the borders thereof, were admitted into evidence.

Mr. BLACKMAR. Now, Mr. Staley, suppose you offer that exhibit. It is 46.

Mr. LILJEQVIST. It has been received, I guess. It is just a question of interpreting it or indicating what it shows.

Mr. BLACKMAR. We have not offered it in evidence yet.

Mr. STALEY. We offer Plaintiff's Exhibit No. 46, A, B, and C, which are indemnity school selection lists, Lakeview series, numbers 1, 3, and 4, which show, among other selections, those in which the base is given as Malheur Lake, and within townships included in the borders thereof.

SPECIAL MASTER. What years were those selections made in?

Mr. STALEY. The school selections, Lakeview list No. 1, is dated December 29th, 1885. School selection list No 3 is dated May 23rd, 1887, and school selection list No. 4 is dated September 21st, 1887.

SPECIAL MASTER. Let them be admitted into evidence. (R. 2342.)

STATE OF OREGON,
OFFICE OF THE STATE LAND BOARD,
Salem, April 11, 193[illegible].

21. Excerpts from reports of Capt. Charles Bendire

a. Plaintiff's Exhibit No. 42

Excerpts from Reports of Captain Charles Bendire Relative to Observations on Malheur Lake. Published by Boston Society of Natural History Proceedings. Vol. 18. (Pages 153 to 168, inclusive.)

Notes from Captain Charles Bendire's report (1875):

Observations were made in the period between November, 1874, and May, 1875, in southeastern Oregon (p. 153).

First visit to Lake Malheur, twenty-five miles south of Camp Harney, April 16, 1875 (p. 164).

Bendire made first boat cruise on Malheur Lake, April 16, 1875 (p. 165).

Malheur Lake covered with ice, April 1, 1875 (p. 166).

Refers to "very island" (line 4, p. 166).

"Island" referred to (line 30, p. 166).

"An island half mile from first one" (line 31, p. 166).

"West of the island where they breed" (line 34, p. 166).

"Here is a large spring (Sodhouse?) coming right out from the hills" (line 1, p. 167).

"The shore here swarms with a species of sucker about eighteen inches long" (line 4, p. 167).

Water about 1½ feet or less deep (line 19, p. 167).

"About the islands in large numbers" (bottom of p. 168).

Page 153. Notes on seventy-nine species of birds observed in the neighborhood of Camp Harney, Oregon, compiled from the correspondence of Capt. Charles Bendire, 1st Cavalry, U. S. A.:

The following notes have been taken, with his permission, from letters of Capt. Bendire, addressed to the writer. They were originally written without any reference to their publication, and do not attempt to give a complete catalogue of the birds of that region. The observations were made in the period between November, 1874, and May, 1875, in southeastern Oregon, and embody new and interesting additions to our knowledge relative to a region hitherto unexplored. "Camp Harney is situated on the verge of a sage-brush, or rather a desert, country at the base of the Blue Mts. The country to the south of it, for two hundred and sixty miles, or until you reach the railroad, is fully as desolate, if not more so, than the worst part of Arizona. Numerous species of water fowl are said to breed about Lakes Harney and Malheur, about twenty-five miles from the post."—T. M. Brewer.

Page 164. (65) Mention is made, in his first visit to Lake Malheur, twenty-five miles south of Camp Harney, April 16th, of meeting with this species.

Page 165. (75) April 16th and April 28th, visits were made to Lake Malheur. The following extracts are from letters dated April 18th and 29th: "I have just returned this evening from my first cruise in Malheur Lake, which has been sailed over for the first time. As an egg-hunting expedition it has proved a perfect success. I obtained about a hundred eggs of the white pelican on one of the islands in the lake, the only one they use, apparently. I had no idea that these birds nested so early as on the first of the month; the lake was completely covered with ice, and I found some snow on this very island on the 16th, when I took the eggs."

Page 166. I returned from my second trip to Malheur Lake yesterday morning (28th).

On my second visit I found they had all left the island on which I took my first eggs, and had buried in the sands the few we had left. They occupy an island now about half a mile from the first one, and

when I visited it there must have been on it more than a thousand eggs.

These birds are by no means ungraceful in their movements and show a great deal of tact and good sense in their fishing expeditions. West of the island where they breed, is their favorite fishing ground.

Page 167. Here is a large spring coming right out from the hills, having a gravelly bed. It is the only place on the lake where the water is sweet and palatable. The shore here swarms with a species of sucker about eighteen inches long, and red on the sides. I camped a night there, and this kept the birds away in the day time.

They appeared to divide themselves into parties of about thirty, who acted in concert, forming a semicircle, gradually closing in towards the shore and driving the fish with them, and as soon as they had them in the shallow water about one and one-half feet deep and less, they all went for them, and such a splashing I have seldom heard. I watched them for several hours, and often had them within fifteen feet of me.

Page 168. Capt. Bendire, in his visit to Lake Malheur, found these birds present about the islands in large numbers, and apparently preparing to remain and breed.

b. Plaintiff's Exhibit No. 43

Excerpts from Reports of Captain Charles Bendire Relative to Observations on Malheur Lake. Published by Boston Society of Natural History Proceedings. Vol. 19. (Pages 109 to 148, inclusive)

Description of lakes (last 9 lines, p. 109).

Under "great blue heron" refers to "small islands in Malheur Lake" where it "nests in greasewood bushes" on islands (p. 142).

Under "American swan"—feeds on roots of water plants (p. 144).

Under "Canada goose," "islands of Malheur Lake," "drifts of tule in the water," "spring of 1876—high water" (p. 144).

Several of the small islands in the eastern part of Malheur Lake (lines 3 and 4, p. 147).

"Some of the islands of Malheur Lake" referred to under "shag"—"nests on the ground and in bushes" (p. 148).

Page 109. Notes on some of the birds found in southeastern Oregon, particularly in the vicinity of Camp Harney, from November, 1874, to January, 1877. By Captain Ch. Bendire, U. S. Army.

This list is not given as a complete exponent of the avi-fauna of southeastern Oregon. I am well aware that there still remain many species to be added, particularly of water birds. As far as it goes it has been compiled from material now in the hands of Lt. G. R. Bacon, U. S. A., and from personal observations. Camp Harney (the central point of my investigations) is located on the southern slope of one of the western spurs of the Blue Mts. of Oregon, at an

altitude of about 4,800 feet, in 43° 80′ latitude and 41° 25′ longitude, west of Washington. To the north of the post the country is mountainous and generally well timbered, with forests of pine, spruce, and fir, and groves of aspens and junipers; in all other directions it is almost destitute of trees of any size, a few straggling junipers and mountain-mahogany bushes being sparingly distributed over the different mountain ranges. The highest and most important of these is Steen's Mountain, about seventy miles to the south of the post, portions of which range are covered with snow the year round. Excepting a few warm and fertile river valleys, nearly the whole extent of country is unfit for agriculture. About two-thirds of it is covered with sagebrush and greasewood wastes, volcanic tablelands, etc., the balance with nutritious grasses, and well adapted for stockraising purposes. As a general thing, the country may be called well watered throughout; a continuous chain of shallow lakes extends from here to the southwest for more than two hundred miles, and some of these are from ten to twenty miles wide and thirty to fifty miles in length. The water in most of them is brackish, and barely fit to drink. Fine springs, both hot and cold, are also numerous. The many lakes form a natural highway and convenient resting places for the immense hordes of waterfowl passing through here during the spring and fall migrations; they also furnish safe and undisturbed breeding resorts for many species. The climate, generally speaking, may be called mild. In the higher mountain valleys it is almost arctic, ice being formed there even in midsummer; and many species of birds breed there which generally go much farther north for this purpose.

Page 142. (144) Great blue heron. A very common summer resident throughout the lower Harney Valley. It breeds in large numbers on one of the small islands in Malheur Lake, in company with Pelecanus trachyrhynchus and Graculus dilophus. Its nests there are placed in greasewood bushes from two to four feet from the ground, and nearly every bush contained a nest. These are flat structures, built out of such material as is readily found close at hand, consisting here for the most part of dry greasewood sticks and a few pieces of dry tule and a little swamp grass for an inner lining.

Another large colony of these birds breeds on the lower Silvies River on willow bushes, in company with other species of herons, but on the islands no other herons are found breeding with this species.

Page 144. (154) American swan. Very common on the borders of Malheur Lake during the migrations. A few remain as long as April 24, and in the upper Silvies Valley, in the Blue Mountains, I heard what I took to be the trumpeting of this species on May 29, 1876. It is possible that a number of cripples remaining during the summer on the lakes gave rise to the idea that they breed here.

The meat of the young birds is, to my opinion, excellent eating, far superior to that of any of the geese found about here. While here they feed on the small bulbous roots of a water plant growing near the shores of the lake.

(179) Canada goose. Only partly migratory, a number remain to breed. I took several nests of this species on the islands in Malheur Lake in April, 1875, all of these were placed on the ground or on drifts of tule in the water. The largest number of eggs I found in a nest was six. In the spring of 1876, when I visited the lake again, I did not find a single nest on the ground; the few which I did see were all placed in willow trees, and not accessible on account of high water.

(181) White pelican. A very common summer resident, making its appearance early in the spring before the lakes are fairly free of ice, and leaving for southern parts in the commencement of November. It breeds in large numbers on several of the small islands in the eastern part of Malheur Lake, commencing to deposit its eggs as early as April 12.

Page 148. (182) Shag. A common summer resident, breeding in large numbers on some of the islands in Malheur Lake, Oregon, and also on Silvies River. Their nests are placed on the ground as well as in low bushes.

22. Plaintiff's Exhibit 47, map of portion of Harney County, in re adjudication waters of Silvies River

Plaintiff's Exhibit 47, being a copy of a map of a portion of Harney County, Oregon, used in connection with the adjudication of the waters of the Silvies River, prepared and surveyed by R. D. Cooper, M. V. Dodge, Charles E. Beery, and U. Webb, from the official records of the Circuit Court of Harney County, Oregon, is admitted into evidence. (R. 2343, 2344.)

23. Plaintiff's Exhibits 48 and 49, water map and diagram

SPECIAL MASTER. Now, are you going to introduce this water map and this diagram, or not?

Mr. BLACKMAR. Well, I believe we might as well have those in the record.

SPECIAL MASTER. Yes; 49 is a portion of 48 upon which Mr. Pecore, at my request, has indicated points developed in the testimony in that connection.

Mr. BLACKMAR. The Government offers those two exhibits in evidence.

SPECIAL MASTER. They are received, and will be marked as Plaintiff's Exhibit 48 and 49. (R. 2345.)

E. The Narrows

EVIDENCE RELATING TO

1. Elevations

a. State bench mark

Mr. Chester W. Pecore, called as a witness for the plaintiff, testified in substance as follows:

Our adjusted elevation of the State bench mark at the Narrows is 4,095.868. (R. 86–87.)

b. Areas

Mr. Chester W. Pecore, called as a witness for the plaintiff, testified in substance as follows:

There is an area of about 16 acres below the 4,089-foot contour in the channel at the Narrows. (R. 87.)

c. Elevations at Narrows

Mr. Chester W. Pecore, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The lowest point of elevation of the sort of drainage channel leading from the open water out there by the tules into the Narrows is about 4,091½ or 4,092 feet, and there is a ridge or dike in there so that when the water in Malheur Lake got down below that elevation it would no longer drain through the Narrows, and the water would stand in a pool out from the margin of the tules toward the center of the lake, and after the drainage down through the Narrows had stopped on the surface there might be a considerable area of open water out there. (R. 2285–2286.)

2. Water conditions

a. In the early days

Mr. Schuyler Whiting, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The bridge was built at the Narrows at the time I took the cattle there in 1895. (R. 181–182.)

Mr. Frank Whiting, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never saw the old hotel at the Narrows but once or twice in my life, and I do not think there was any water there (from Malheur Lake). (R. 201.)

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

I have been down to the Narrows a number of times, and I have been there when there was water running under the bridge and when it was not. (R. 221.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

I know where the hotel was at the Narrows. I have seen the water back there. The water used to go there frequently very close to the hotel. I saw it one year when you could nearly tie a boat to it, and then it would be out quite a ways. I have seen the water nearly up to Charlie Haines' store, and then another year it would be way down there. I have seen the water within a foot of the top of the bridge; I have seen it when it was way down, and I have seen it when they had to dig a hole to get water for the cattle. It all depended upon the kind of year we had. (R. 287–288.)

Mr. WILL Y. KING, called as a witness for the plaintiff, testified in substance as follows:

I was there at the Narrows in the early days, but there was nothing there. There was water running through the Narrows there at that time. (R. 302.) In later years I have been there when there has been no water there, but not in the early days. (R. 303.)

Cross-examination:

I have never seen the water up anywhere near the bridge in the Narrows. I never happened to be there at that time. There was no bridge there when I was there. We did not cross the Narrows in a boat. In reasonably high water we would swim the horses or cattle at the Narrows to get them across. (R. 318.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Why didn't they drive their cattle across this marsh, as some people try to claim it is, and across the Narrows, why didn't they drive right across the lake anywhere?

A. There was a little mud.

There was water there at the Narrows for quite a long way. I never did swim my stock there. (R. 481.)

Redirect examination:

In the years following the breaking through of the Sand Reef, I did not have to cross with stock there at the Sand Reef. It was all dried up and you could cross most anywhere.

Mr. BLACKMAR. Q. That is, you mean you could cross the lake anywhere?

A. Yes; down in that part of it. And then that crossing came in up at the Narrows, and that stopped, and that was out of our route to go that way.

I did not cross with any stock at the Narrows before the bridge was built. I never went through there. (R. 488.)

Mr. CHAUNCEY CUMMINS, called as a witness for the plaintiff, testified in substance as follows:

I have been across the Narrows a good many times since that bridge was built. I could not tell the years because I don't know when the bridge was built. I frequently came to Burns by way of Wright's Point, until after that bridge was built, to go to the railroad. (R. 494.) The railroad was not built to Burns at that time. I came to Burns to get supplies and go to the county seat. I could not cross at the Narrows before the bridge was built. It was all after.

(NOTE.—The work of building the bridge at the Narrows was commenced in the fall of 1892 and finished in the winter of 1893. R. 781.)

Mr. BLACKMAR. Q. Crossing at the Narrows, I presume you have seen lots of water going under that bridge?

A. Sometimes, and sometimes there was no water. (R. 495.) There always has been some water. (R. 496.)

Cross-examination:

I don't know that I ever crossed there at the Narrows; I supposed it was muddy. I never tried to cross there. I never was down there until after the bridge was built. (R. 496.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

Before the bridge was built at the Narrows, I did not cross there with stock; there was water there before the Reef broke through and they used to take the cattle there that way (across the Sand Reef) and I have crossed with cattle on the bridge since it was built. (R. 515.)

Cross-examination:

I have seen the water up to the place where the old dance hall was built at the Narrows, after the Sand Reef broke through, but not so very many times. I have not seen it there after the dance hall was built. I do not know the year it was built. (R. 517.)

Mr. LILJEQVIST. Q. Did the water frequently, after the bridge was built, come up to the bridge?

A. Yes, sir; I have seen it up to the bridge.

I do not recollect that they crossed the Narrows at all with stock before the Sand Reef broke through; there might have been some of them, but I have never seen anyone go across. (R. 526.) It was deep enough to swim a horse at the Narrows. (R. 527.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, testified in substance as follows:

I never crossed any stock at the Narrows. (R. 542.)

Mr. GEORGE E. WHITING, called as a witness for the plaintiff, testified in substance as follows:

I have never crossed the Narrows with stock except over the bridge. I know when the bridge was built, but I don't recall the exact date. (R. 558.)

(NOTE.—The building of the bridge at the Narrows was commenced in the fall of 1892 and finished in the winter of 1893—Simon Lewis. R. 781.)

Mr. EMIL BAKER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have not seen the water in the Narrows up to the Narrows bridge, but it was up quite a ways; I could not say how far from the top. It was probably three feet, something like that.

I have never seen the water on the side of the dance hall at the Narrows. (R. 605.)

Mr. LILJEQVIST. Q. That was before your time there?

A. Yes, sir. (R. 606.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, testified in substance as follows:

I have been down to the Narrows and I have seen the water running in the channel there. I have also seen it when there wasn't any water in the channel, when it was absolutely dry. (R. 615.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, testified in substance as follows:

I have crossed the bridge at the Narrows, but the water was not running. I think it was dead water. At other times I have seen no water at all under the bridge; it was entirely dry. (R. 734.)

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I can not tell you what a man would call a normal spring. I have seen the water higher sometimes than others at the Narrows. I have never seen the spring flood start at the Narrows in February. I never was at the Narrows when the chinook winds came. (R. 955–956.)

I would not say that I have seen the water at the Narrows deep enough to swim a horse, but I might have. I would not say positively. I never did swim my horse there. I could not say how high the water was at the widest point at the Narrows. I have seen it up to the length of the bridge there, but I couldn't say how wide it was.

It is quite a wide bridge. I do not know how wide it is there at the Narrows.

Mr. LILJEQVIST. Q. You do not know anything about the Narrows, or Malheur Lake, or Harney Lake?

A. No, sir. (R. 957.)

Mr. JAMES M. BRANDON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I was not down at the Narrows very much; never had much work around that country; our work was all up this way [indicating].

We crossed the Narrows on the bridge; don't know whether we crossed there that spring (1895) at all. (R. 1001.) I crossed there in the spring of other years; the water looked to me from the bridge there right by the Narrows that it was 10 to 12 feet deep; probably deeper; I couldn't say as to that. (R. 1002.)

Mr. JOSEPH WILLIAM CLARK, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I do not remember that the water ever got deep enough in the the channel to wash the bridge out at the Narrows. I have heard it was washed out, but I do not know whether it was or not because I was not there. (R. 1040.)

Mr. ROBERT DILLARD BAKER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been through the Narrows a good many times but I was not there before the bridge was built. I never did swim a horse or any cattle across the Narrows. (R. 1082.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, testified in substance as follows:

I crossed there at the Narrows in either 1889 or 1890, and I have crossed before there was any Narrows there. I remember when McKinley first built his little shack across from where the Narrows now stands. (R. 1205.)

Cross-examination:

When I crossed the Narrows in the fall of 1889, there was no water in there at all. (R. 1223–1224.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never seen the water wash up over the top of the bridge at the Narrows. (R. 1660.)

Mr. SETH S. SMITH, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. At the Narrows at the ordinary high-water mark when you first knew it, in the spring how wide was the Narrows across the channel?

A. Oh, it must have been close to a mile when you hit the edge of the water on this west side across to the other side.

Q. How often did it come up that way—every spring?

A. When there was water enough to raise it high enough so that it would go over there.

Take it most years when the lake commenced to recede so that the water would not raise up there, there was more or less water across that road during the spring.

The road runs in there to the Narrows.

Mr. LILJEQVIST. Q. Then did the water in the spring come across the entire unsurveyed area at the Narrows?

A. I never seen it up in the Narrows at all.

Q. Now, I am asking you at the Narrows, how wide was it in the ordinary springtime across the water? (R. 1772.)

A. How wide was it?

Q. Yes, across the water at the Narrows.

A. You mean the east and west?

Q. Well, would it be——

SPECIAL MASTER. North and south.

Mr. LILJEQVIST. North and south, or northwest and southeast practically. The Narrows run practically from the northeast (R. 1773) to southwest, at the Narrows where the bridge is.

A. Of course, that lane, it was anywhere from four inches to a foot and a half deep, just according to the way the ground was there. There were some places that was lower, then the water would be deeper, and other places higher, so that the water would be shallower.

I was down at the Narrows quite a few times; I used to ride down in that country quite a little bit.

Mr. LILJEQVIST. Q. What I am trying to get at, Mr. Smith, is how wide was it across the water in the springtime at the Narrows?

A. Well, like I said there a few minutes ago, I had an idea it was close to a mile, close to the edge of the Sand Reef (R. 1773) on this side, right into the edge of the town, to the edge of the Narrows where the bridge is there. It was right close to a mile. I never measured it to see, but the lane runs that way and jogs around back and forth there, but I think it is just about a mile across. (R. 1774.)

b. 1870–1880

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never went across the Narrows before they had a bridge. (R. 1119.) I do not know how deep the water was at the Narrows when the water came in the springtime, the first time I saw it. I never did measure it.

Mr. LILJEQVIST. Q. Now, when you said that you saw the water 10 or 12 feet at the Narrows, is that merely an estimate, or from your personal knowledge?

A. Just merely an estimate. (R. 1120.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

In the early days that little peninsula that is now known as the Narrows was not designated by name. (R. 1361.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I crossed the Narrows before any bridge was put in there; I was down at the Narrows before you could cross it; you could not very well cross it on horseback, because it was very miry. It had been crossed but I would not tackle it because the horse might mire down. It would be dangerous; I would consider it very (R. 1805) dangerous to attempt it.

Redirect examination:

It was a combination there of both mud and water; I was more afraid of the mud than I would be of the water. (R. 1806.)

Mr. ALPHENA VENATOR, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. And you found no water sometimes, and other times you found water where you could swim a horse in that same place?

A. I don't know about that; I never tried. I used to cross before the bridge was at the Narrows. I used to cross the Narrows, but it was not by swimming.

I never did swim it, and I do not think I had occasion to cross that channel in real high-water time. Before that bridge was built in there, I do not believe I was in that channel during the real high-water time. I remember I crossed it in the latter part of May, and it was not swimming (depth). I would have no way of knowing when it would require swimming to get across (that channel).

Mr. LILJEQVIST. Q. Well, then, in your statement that you gave when you said there would be very few places you could cross without swimming the channel, was that a mistake? I am just trying to refresh your memory? (R. 2329.)

Mr. BLACKMAR. I do not think Mr. Venator ever saw that statement after it was written up.

Mr. LILJEQVIST. All right.

A. I never swore to that statement. That statement was given when I was very tired, and it was given subject to correction.

Mr. LILJEQVIST. When you got rested up it dried up?

A. I can't say as to that. (R. 2330.)

c. 1880–1890

LEE MINIS CALDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I am familiar with the Narrows Lane. I have not been down that way since the Sand Reef (R. 155) broke through in 1881. At that time there was no hotel there; I have been to the hotel that is there since the Sand Reef broke through; I never saw the water near that hotel in the springtime, and I am not sure if I was there at that time. (R. 156.)

Mr. MARTIN ANDERSON LUCAS, called as a witness for the plaintiff, testified in substance as follows:

When I was at the Narrows in the early eighties (R. 426) in the fall, while hunting (R. 420–422) I did not see much water there. There was a little under the bridge, but not very much. The stream I should judge was about six to eight feet wide where the water run. (R. 422.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

When I lived at the Narrows (1894–1897) all I did there was to go skating; the Narrows was quite a thriving place at one time, and we thought it one of the liveliest frontier communities in the State of Oregon; there was quite a crowd there. The people that lived there were the ones that skated mostly at that place.

M. LILJEQVIST. Q. So that you found the water useful for travel on skates in the wintertime? A. Yes, we did. (R. 637.)

Mr. GEORGE A. SMYTH, called as a witness for the plaintiff, testified in substance as follows:

I crossed the Narrows in September in the '90s after the bridge was built and there was water running under the bridge. (R. 669.)

Mr. ROBERT J. MCKINNON, called as a witness for the plaintiff, testified in substance as follows:

I have been around the Narrows and I have seen it pretty dry there, but I don't know that I have seen it plumb dry. I have seen the mud and a little water; I have seen it when there was not a stream running through there; I only saw that condition once, if I remember right.

I never cut any hay down there, but I have seen it cut at the Narrows.

I think there was a season or two that they didn't cut any hay at all, if I remember right (R. 813.); I could not say how many years ago, but my best judgment would be that it was probably two or three.

I recall the high-water season of 1898, and I was down at the Narrows that year. I worked there on the other side of the Sodhouse. At that time, I think the water came within six or eight inches of the bridge; it might have been a little farther or closer, don't just remember, but it was pretty high. (R. 814.)

Mr. JOHN L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

The homestead that my father had at the Narrows was about equally divided between hay land and about thirty acres that we could plow; it was cut off diagonally from a slope. The water we got there was from the lake; as the water would rise it would go over what we called our place; the water covered the entire place in different years; if you want the year, it was about 1894, which was an unusually high-water year; there was lots of water then. (R. 883.)

During 1889 or 1900, and probably two years thereafter, the water was pretty well back so that there was a great deal of land there in the channel—what we called near the bridge—that was uncovered, that is, the water wasn't on top of the soil there; it remained that way for about a year when the water came down and filled that whole country.

I went to the Narrows in 1889 (R. 881), and I left there about 1901, as I remember, and I was 12 years old.

During the period of time from the date that we first went to the Narrows (1889) until 1901 we got different stages of water every year; you could not tell from one year to the next how high the water was coming; the water did come up to different stages in different years.

Mr. BLACKMAR. Q. I presume after the high water in the spring, then the water eventually receded, did it not?

A. It did. We had the high water in the spring, say from April. We had the thaws in March and April and May, when it would reach down there, and it would rise, say in June; and then (R. 884) possibly ordinarily in July and August it would be receding, you know, and it would go down, and we would cut our hay in August, and sometimes as late as September, or as late as October, just as long as we could until freezing time. It would take the water until that time to recede sufficiently off our grass land.

The point to which the water receded was not the same every year; it seemed to take about so long to dispose of that water, and if we had more in the early spring, why it would lay deeper there in the fall; so that the stage to which the water receded depended entirely upon the rainfall, or the snowfall that we got in the mountains, and what water came down in the springtime.

There was a slough (R. 885) coming through there right near the house (on the homestead at the Narrows), and then within a reason-

able number of yards, I do not know how many exactly, the water would come through there nearly every year; maybe sometimes it didn't reach clear through on account of an embankment in the road. That was true between our house and the lake, or the channel proper. I will call it the channel, because we termed it that; then it would reach the higher land, which we always termed about a quarter of a mile from the house down to the bridge, and then this land right near the channel from this slough, was a gradual slope, and it didn't cover (R. 886) it with water every year, or no year, part of it, except right on the banks of this channel, possibly reaching 400 yards north from the bridge line—in that section, you might say. Well, there was that higher land in there, possibly five acres, that during any time I know of was never covered with water. It seemed to be higher. That is just about the condition of that land between our house and the hotel there and the bridge or channel. (R. 886.)

This line through here, diagonally across, following the channel (in the Narrows) and the part forming the channel, the land was lower, making a water break when the water came high; sometimes it would not reach out on what was our so-called plateau land.

Neither myself nor the family cut hay up in the east of Malheur Lake while we were living there. (R. 887.)

Cross-examination:

I am not familiar with the Neal meander line, and I can not tell you where it is in front of our place at the Narrows, but I knew on the ground where it was. (R. 899.) I might not be able to go and find any of his stakes, but I knew approximately how he run from the border into the water. Our land was south of the Neal meander line.

On that side of our land we did not plow it. Our plowed land was on the west side of the channel.

Mr. LILJEQVIST. Q. You mean on the west side of the channel? (R. 900.)

A. Yes; across the channel. If there was a new meander line put on the west side of the channel, or north and west—it is west and north right there, we called it north—I don't know where that was.

We had lands north and west of the channel, on both sides. I do not know where the Neal meander line ran on the north and west side of the channel. On the east and south side there was hay. There wasn't so much slope to what we termed the bank of the lake on the south side. As near as we knew (R. 900), and I watched the operation, the meander line wasn't changed very much. He (Neal) went a little farther into the lake with it; just where it would show I don't know.

In those ten years the water would usually come up onto our deeded and patented lands and that was the water we raised our crops with.

As far as I knew, the channel in front of our property (at the Narrows) ran northeast and southwest, approximately (R. 901), and some of our lands on the south side of the lake, where the Narrows is located, were to the southeast of that channel, and we also had some lands across on the northwesterly side of the channel. We plowed part of the lands on the northwesterly side of the channel. At one time only, in 1894, all of that land possibly was covered with a foot of water. That was patented land.

Mr. LILJEQVIST. Q. And this area now between your two tracts, one on the southeast side of the channel and one on the northwest side of the channel and between the Neal meander (R. 902) line, where did the water stand ordinarily in the springtime with reference to your meander lines?

A. In the springtime?

Q. Yes. (R. 902.)

A. Well, during that high-water time on the north it has been all covered, the whole property; and on the south it wouldn't, I would say, rise more than—to the right at the Narrows—it wouldn't vary from 50 to 100 yards in places; and as we went east, why, the ground seemed to level more; and farther east on that property, why, the water would be out farther on the property.

Q. Was there a channel upon your land which was on the southeasterly side of the Narrows?

A. A small channel there.

Q. And would the water in the springtime ordinarily go up and go into that channel?

A. Yes.

Q. So that you really got some of your deeded lands in the normal springtime flooded by ordinary high waters of the lake as you went through the channels?

A. I don't know what you mean by ordinary normal springtime. I wouldn't state as a positive fact as to that, but we would get an average; you couldn't say always, because it varied some.

Q. During the average years did you get water upon your deeded lands southeast of the Narrows?

A. Yes; the water was on it. (R. 903.)

Q. Then the Neal meander line ran in front of you, as I understand it, and your land was approximately where the lake came in during the average year?

A. We aimed to get an average of what you would call the high water and the natural low water, and just average that up as near as we could.

Q. Then how much difference was there in front of your house between the high water and the low water; how wide a space?

A. Right at the Narrows on the south side there was practically none; a few feet from this slough that came down to the house.

Q. How wide was the space between the high water and the low water?

A. As we went east it was greater. Probably on the eastern end of it it would vary three or four hundred yards, you see, on the eastern part of it. It went from what you might say nothing to a V shape. (R. 905.)

Q. And in the springtime the water would go from a point 300 feet down to the lake in the dry part of the lake, is that correct, on the eastern part of your land?

A. That would be the difference of the low water and the high water on the Hembree property.

Q. Yes; that is what I mean. And on the eastern part of your land, where was the Neal meander line with reference to that higher point where the water came in the average year?

A. Where we had the largest space on the eastern (R. 906) side there?

Q. Yes.

A. I couldn't tell you exactly, because it would average up in that distance in proportion to the water. As I say, the water came higher.

Q. In your judgment, was the Neal meander line approximately the ordinary mean high-water mark on the eastern part of your land?

A. That was what we thought at the time. (R. 906.)

Q. This year 1889, which the testimony shows was the driest (R. 910) year in those early years, I want you to describe how it was out in front of you as you remember it?

A. On our particular lands there?

Q. Yes.

A. I will say right down to where we laid the line of the bridge, there was water down to that point, south. Then northeasterly in that channel, there was water there. I don't remember of it being dry any of those times; and then there was water in the lake, as I remember it, up east.

I remember the year 1889.

As I remember it, the bridge at the Narrows was built in the season 1892–1893.

I do not know how high the water has come to the bridge during the average years. The water has been around five feet. I measured it with our boats, as we have gone under it many times, and we say, "The water is about (R. 911) four or five feet." I have seen it that high under the bridge. (R. 912.)

My folks ran the hotel at the Narrows; that was after the bridge was built.

I do not recall if the water with reference to the bridge in 1894 was any deeper than what we termed; it wasn't more than about five feet.

I have never seen the water up on the old dance floor at the Narrows. I was not there during that dance-floor time. I have seen

the water in various places over the county road that leads toward Burns from the Narrows in a northeasterly direction immediately after crossing the bridge and leaving it on the north side. I have seen it farther. I have seen it (R. 912) before it was thrown up at all; there was no levee there. It was covered the same as the rest of the land on either side. Since they built that grade there I have seen it up over that in numerous places, just as we traversed it; over the grade at that time; there were culverts built there to let the water flow through and pass down to the natural source, and I have seen it over the grade in places. I do not know how high that grade was built over the adjoining lands but I have seen the corner as you leave the bridge (R. 913), where the road makes a square turn possibly 300 feet after you leave the bridge, covered with water about 10 or 12 inches at different seasons at that time. (R. 913–914.) The point I mean is entirely west—going west of the bridge, and turns due north at the section line; I have seen the water there about 10 or 12 inches deep, to average it, and that is guessing. I would not say that that was an average year; some years there wasn't any on there. (R. 914.)

Redirect examination:

I do not know whether that bridge at the Narrows is at the same elevation to-day as when it was first built; it might have sunk one way or the other (R. 914); a new bridge may have been built at a higher elevation (R. 915).

I and the family still own that place down there at the Narrows, and we still have our house on it. I rent it out. (R. 918.)

Mr. Joseph Logan Shirk, called as a witness for the plaintiff, testified in substance as follows:

I have never crossed the Narrows with cattle, but I have crossed the bridge with a rig.

I was travelling back and forth through the Narrows to Burns several times during the years 1888 and 1889; after that I made several trips through the years. I came to Burns on different businesses later several times. Several different times I came in bringing a teacher of our county to the institution here. Various times my father would send me to Burns. In crossing there at the Narrows I have observed the stages of water under the bridge, but to definitely state the elevation of the water and the amount (R. 943), in no particular instance do I remember anything particularly about it excepting that there was water there.

On one occasion I came out in front there when we were having some extra high water; I am not certain if that was the year that they spoke of as being high water, or another year, but I know we did have water that was rather unusual at one time when I came through there. I do not ever remember seeing the water up to the bridge. (R. 944.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In 1886, 1887, and 1888, along in there, I have seen the water flowing back and forth through the channel from Harney Lake into Malheur Lake, when the water was high and the lakes were about on a level; in the morning it would go one way and in the evening it would go the other. (R. 1660.)

Mr. GEORGE WASHINGTON SIMMONS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The water did not ordinarily come to the top of that old bridge; just in exceptional wet years. (R. 1753.)

Mr. GEORGE L. JAMES, called as a witness for the plaintiff, testified in substance as follows:

I rode in there at the Narrows in 1889 and 1890; at that time, along through the nineties, I rode in there a great deal every winter and fall.

I have crossed the Narrows on horseback, but only across the bridge.

I have been down there when there was practically no water under the bridge, in the fall of the year after haying.

Mr. BLACKMAR. Q. What year is the earliest that you can remember of being dry there?

A. Well, I don't remember of crossing there until after '90.

After 1890, I went across the bridge there several times with a team.

Without being able to specify the exact years, from time to time I have seen it dry under the bridge.

At other times of the year, I have seen a lot of water there. I was never right there in the spring.

I have seen a good deal of water in it though, different years. (R. 1811–1812.)

(No cross-examination.)

Mr. WM. HENRY MCKENZIE, called as a witness for the plaintiff, testified in substance as follows:

Since I have lived there at the Narrows I have seen the water passing through the old bridge; on the ends of the old bridge I have. The old bridge was built low at the ends and high in the middle, and there was no guard there when the first bridge was put in there; it was very low at the ends, and I have seen (R. 2147) the water at the ends of the bridge. That occurred when we had our high water, but it did not occur every year. I do not know how many years it did occur; I don't just remember how many years.

Mr. BLACKMAR. Q. About how many times, that is what I want to know?

A. Two different years of extreme high water.

There have been other years when I have been down there when I have seen the Narrows entirely dry; I have seen it dry more times than I have seen water there.

I saw it dry there in 1889.

Mr. BLACKMAR. Q. Then after that time, and prior to 1900, do you remember whether it was dry under there, or not?

A. Well, I think it was; I couldn't say for sure as to the year. (R. 2148.)

We cut hay on my father's place down there (the Alexander McKenzie place). The water we got on the land that produced the hay was from the overflow of Malheur Lake—what was called a lake.

We have not been able to cut hay every year ever since we moved there. Somewhere on the land we have got a little hay at least (R. 2151) until these dry years. The last four years we have not (R. 2151) got anything on there.

We got different amounts of hay in different years; that was on account of the water; there never have been two years alike that I remember of.

The water came to a different level every year. The hay on my home place consisted of sugar grass, foxtail, and some salt grass.

My home place runs through the Neal meander line; it runs through the field that is fenced. (R. 2152.)

Cross-examination:

My father is dead.

Mr. LILJEQVIST. Q. When you first knew the country there was an open channel all the way through up to the open part of the lake, wasn't there? (R. 2152.)

A. The channel was the same as it is now.

You can not row now in that channel. When I first saw it it was about the same as it is now.

Mr. LILJEQVIST. Q. Did you ever see your father's statement that he made before Mr. Brown and sent to the State of Oregon?

A. His statement?

Q. Yes.

A. No; I don't think so.

Q. Are you sure there wasn't any open channel all the way from the Narrows to the open part of the lake when you first went there?

A. I wouldn't say as to that. It was all dry when I first went there. How I happened to know how it was all dry, my father set the tules afire, and the fire got away from him and burned the whole swamp and burned it off. (R. 2153.)

That was in 1889.

That was the time they (the settlers) had the big fight with the cattle companies.

The water came back after that. (R. 2153.)

d. 1890–1900

Mr. SCHUYLER WHITING, called as a witness for the plaintiff, on redirect examination, testified in substance as follows:

At the time I crossed the bridge there at the Narrows in the fall of 1895 with the cattle, there was a stream of water about thirty or forty feet wide running under the bridge. We did not take the cattle through the water but drove all of them over the bridge. (R. 183.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

I lived near the Narrows from the early part of January, 1894, to May 1897.

The dance hall that you have reference to has been built since I was there. The old schoolhouse and dance hall that was located there at the Narrows is not where this other dance hall was, that is perhaps the one you mean. The old schoolhouse and dance hall is gone. It was near and west of the present store building there.

While I lived down there, the highest water that I saw was in 1894, the same year that I came here. (R. 624.) It might possibly be 1895, but I believe 1894 is right. (R. 624–625.)

The water came up pretty close to this hall that we speak of; the one that was in existence at that time, but it is not there at the present time. The one I have reference to was near the store, or gas station. That would be about 150 or 200 yards south of the hotel there at the Narrows. The water did not cover the floor of that store, nor did it even come up to the foundation, that is, not at the hall I have reference to. I heard the evidence this morning, but I believe the hall that the witness had reference to this morning was the one that is up there now, and possibly the water was up that high. The water was up that high quite a period of time in the (R. 625) spring-time. (R. 625.) The water was over the lane at that time. The road was not as high then as it is now. That was just following the time when the bridge was built there. (NOTE.—The bridge was built at the Narrows in the fall and winter of 1892–1893.—Simon Lewis. R. 781.)

The water did not run over the bridge that time, but it was near the approach to the bridge. It would be up to the stringers, but I do not remember of it running over the floor.

There was never any very low water during the time I was there, the water stayed up pretty well, and the channel at the Narrows was never entirely dry during that period.

I left the Narrows in May of 1897, as I remember; I may be wrong one year there, but I think that is right.

The channel at the Narrows froze over during the winter while I was there (R. 626) and I, together with other boys, had a great

time skating on it. The current through the channel was not swift enough to interfere with freezing except in spots. Out a ways from the channel the water was spreading over another place, it might remain open there a short time.

The water that came through the channel at the Narrows was tainted a little bit with alkali. We never used it for drinking purposes. There was always some fish in the lake there, but not any that we ever got. The fish were small and not big enough to eat. (R. 627.)

Mr. SIMON LEWIS, called as a witness for the plaintiff, testified in substance as follows:

In 1892–1893 I was road supervisor of Harney County for the north side of Malheur Lake; there was another man on the south side (R. 780), and we worked together building that bridge at the Narrows by district labor and subscription thrown in to help build it; there was no county contract on it. The bridge was built mostly in 1892. (Mr. Collins: It was started in 1892 and finished in 1893.) (R. 781.)

At the time I was engaged in building the bridge down at the Narrows, there was no water going under it at that time. It was not dry, but there was no water; it was mud. I have been at the Narrows when there was considerable water going through there, and I have seen it when it was almost bone dry.

Mr. BLACKMAR. Q. It has been your experience that the Narrows usually gets dry in the fall and the winter?

A. Not every fall, no; but I believe more than half of the time it would be. (R. 786.)

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

In 1890 my father took up a homestead at the Narrows (and I lived down there from about 1890 to 1896 or 1897. (R. 1053.) Our property joined the Hembree property on the north. (R. 1042.) My father was a stockman, and he had cattle there, and from time to time I helped him with them. We turned the cattle loose on the high ground around the lake, in the vicinity of the Narrows and Mud Lake, and they even run up north around what we called the edge of the lake. In the fall of the year they would go into the west end of Malheur Lake sometimes.

When we first came to the Narrows on about June 1, 1890, the water was up pretty well; it started to recede in the summer, could not say just when, or along in August, I imagine, excepting right at the Narrows where it was dry that fall where the bridge is, so that we could cross over on each side of that channel from the west side, and also on the east side. (R. 1043.) We lived there at the Narrows something like eight to ten years.

Mr. BLACKMAR. Q. During the time of the ten years you resided there; did the height to which the water would come each year change from time to time?

A. Yes, sir.

Q. Did you ever see two years when it was alike?

A. Not exactly; no, sir.

There were parts of the land that my father owned there, about 40 or 50 acres, that the water did not go over unless it was a high-water year. We had altogether about 160 acres that we took up originally. (R. 1044.)

On the part of the land that the water did go over for the first few years we raised a little grain, wheat, and barley, and below the grain land was hay land. We planted winter wheat, but it was not planted after the water had receded. (R. 1044.) We planted the wheat about the first or the middle of April, and the barley from the middle of April to the first of May. We farmed that land; there was no water came on it, the water was close to the land, but not over the land. The moisture that we got (for the grain land) to make the crop was taken from the lake. There was a sort of a channel down there in the Narrows, which remained practically in the same place every year. (R. 1045.)

I was down there at our place at the Narrows when Mr. Neal ran a line through there and I am familiar with the location of it on part of our place. From time to time we have cut hay below that line. We cut hay every year except a few during that high water. Before the Neal line was run we had exceedingly high water and we never went down there that winter at all. The next summer was when they surveyed this line, as near as I can tell. (R. 1052.) The high water was in 1894. We cut some hay in 1895 but I do not think we did in 1894.

Mr. BLACKMAR. Q. Outside of 1894 was there any year in there that you couldn't cut hay below the Neal line?

A. In the lake, yes; but I wasn't there then, but they didn't get any hay I know for a year or two there.

Q. Just confining the question to the time that you were there: Was 1894 the only year that you couldn't cut hay below the Neal line? R. 1053.)

A. That was the only time that they couldn't cut hay there. (R. 1053.)

Cross-examination:

I went to live at the Narrows in 1890 and remained there until about 1896 or 1897. My father, Henderson Elliott, proved up under the homestead laws and secured a patent to his land (R. 1053–1054), and that property is located right across the channel in a northwesterly direction from the Hembree place.

He sold out to Alexander McKenzie.

We got water from the lake in the seasons of high water onto the deeded lands to enable us to secure crops. The water didn't

pass the meander line so very far, where we lived, most of that ranch was subirrigated, but it got on some of it.

Mr. LILJEQVIST. Q. At the lowest part of the year, how far did it (the water) fall down below the Neal meander line on your father's ranch?

A. It usually went dry clear across above the channel, I would say half a mile. (R. 1054.)

In different places the channel between Neal's line and the Hembree line was only a half a mile and less. In some years the whole channel from the spring to the fall would dry up. I can not say the exact year. The only water we got on my father's place was the water from the lake. There was no overflow from the Blitzen (River) or from the Silvies River down there and the lake was the only water supply we had and we depended upon it to raise our crops, and that part of the deeded land that was not (R. 1055) overflowed we depended upon subirrigation from the lake. (R. 1055.)

Mr. LILJEQVIST. Q. Ordinarily during the time that you were there from 1890 to 1897, would you say there was some overflow onto the deeded lands?

A. Yes, sir.

Q. Now, with reference to ordinary high-water mark along your father's land on the southeasterly part where the Neal line, was run, from your observation on the ground where the water normally came in the springtime, would you say whether or not that Neal line was approximately run along ordinary mean high water?

A. Yes.

Mr. BLACKMAR. Q. Let me ask you a question, Mr. Elliott: Do you know what he means by ordinary mean high water?

A. No, sir; I do not.

Mr. LILJEQVIST. Q. Well, did you know where the water came up ordinarily in the spring?

A. There is a great deal of difference with relation to the water in the spring. Some years it came away up, and other years it didn't come so high.

Q. How much higher did it come some years than others in depth at the Neal line?

A. I would say two feet.

It would be two feet higher, and the way I figure that is because we run the boats over the surveyed land at that time. (R. 1056.)

Mr. LILJEQVIST. Q. Now, then, from the higher times, do I understand that it dropped there between two feet above your deeded lands down to the Neal line, or what is it you are trying to express? Let us get it so that I can understand it. (R. 1057.)

A. In the extreme high water of the year it was the highest. Out on this land there was a ridge, but I don't know just where that was; anyway, there was a ridge there. The ridge came in here, and our house was here, and that water was clear up to the ridge, and we could run a boat over.

That was an extremely high-water year. I do not know how much higher that was than the meander line. That was in 1894 when we had the high water, in 1895 the water just came even with the Neal line; just around the edge of it.

Mr. LILJEQVIST. Q. And where was it ordinarily in the average year?

A. Of course, in the spring it was a little higher; it was away up, oh, I would say three or four hundred yards.

Q. Three or four hundred yards it went up beyond the Neal line in 1895?

A. Somewhere around there. (R. 1057.)

Q. Now, in the average year after that until you left where did it come?

A. Well, it just came around the meander line; sometimes a little bit over.

I have seen the water deep enough at the Narrows to swim a horse.

Mr. LILJEQVIST. Q. What do you know about the depth of the Narrows, and the stock and horses getting across there through the Narrows? Just tell it in your own way.

A. I couldn't say exactly as to the depth of the water (R. 1058), but they would come there and take the saddle off their horse and put it in the boat, and lead him out in the water, and there was probably, I would say, 30 or 40 yards there that the horse was apparently swimming. Of course, if he went down he (R. 1058) went into the mud, and a horse would clear down so that he was plumb under the water, and then he swam for 20 or 30 yards.

The first year I was there was the only time I ever had any experience with that. In subsequent years the water was sometimes a little higher, and sometimes a little lower, but it was about the same. (R. 1059.)

I never saw the water up to the floor of the first bridge that was built at the Narrows, but I have seen it to the floor of the second bridge. That is not the bridge that is there now. That one that is now there is the third bridge. They tore the first bridge out and put in a new one. They did not build the second bridge higher than the first one. They tore out the second one because it was getting old and rotted out by ants. (R. 1061.) The third bridge was lower than the second one; they took it out and piled it up there, put in the new one, and sold the old one to someone. I have never heard that the bridge at the Narrows was washed out.

I knew where the old dance hall was at the Narrows but I never saw the water up to the floor of that dance hall. It must have been before my time. I was not there before there was any dance hall, and if the water came there before the dance hall was located I was not there at that time. (R. 1062.) I saw the water up within about 30 yards, I think, of where the dance hall stood; but I could not say how many feet it would take to put it to the floor. I saw the water east of the dance hall during the real high-water time,

within 30 yards of where the hall stood. That was an unusually high-water year. In the average year the water was quite a ways back from there. (R. 1063.)

Mr. GEORGE FRY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I crossed at the Narrows in March, 1890, and there was no bridge there at that time. I was on horseback, and there was a scum of ice on the water there; I thought I would rather take the chance of crossing in there with a horse than to have to ride up to the Sand Reef; when I got out in the middle of the water there, the horse laid down, and I waded out.

Mr. LILJEQVIST. Q. Now, there is some testimony here to the effect that in 1890 the water came at a very high mark. That must be erroneous. It must be a subsequent year.

A. It wasn't very high in March at that point. (R. 1131.)

Mr. L. W. SHEPARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been at the Narrows and seen water there; I have crossed the bridge there when the water was possibly two feet below it, and at other times I have crossed when there was scarcely any water at all there. There was kind of a channel there (at the Narrows) and you could see the water on both sides of the bridge at the time it was about two feet below it; you could see it for some distance.

I do not know about Mud Lake. (R. 1296.) I did not go up on any hillside and look out over the country.

I did not do any hunting there in a boat. (R. 1297.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

At the time I lived on the south side of Mud Lake, near the Richard A. Smith place, from 1891, during nearly all of the nineties (R. 1306–1308) I always saw water running through the Narrows, but I have seen it dry up in the fall, although the water always ran through some time in the year. The first year we moved in there, in 1891, us boys had to go to school, and it was beyond the Narrows, south of the Ed. Oliver place, but I don't know the name of the house I went to school in, and that fall Dad and Henderson Elliott cut tules and made a roadway through so that we could ride to school and back.

Mr. BLACKMAR. Q. Was your school on the south or on the north side of the (Malheur) lake?

A. It was on the south side of the Ed. Oliver place up near Malheur Lake; and later on at the Narrows. I have seen it dry in some years; and I have seen it, three different successive years, that the channel had water all year long. Sometimes we went to school on the ice. (R. 1323.)

(NOTE.—The Ed. Oliver place is located in the northeast quarter of section 30, T. 26 S., R. 31 E., south of the lake. The schoolhouse is probably located in the southwest corner of lot 12, same section, township, and range.—Pecore.)

Cross-examination:

The first term of school I ever attended there was not in a schoolhouse. It was on the sagebrush or salt grass flat which was south of the Ed. Oliver place. I don't know where it is. It was south of the Ed. Oliver place, at the lower end of Malheur Lake. I don't know how close to the road it was. I do not know whether it was on surveyed land; I think it was though; it was on a ridge away from the lake. (R. 1332.)

Mr. GUY L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

When I lived at the Narrows with my folks from time to time I helped cut hay.

As near as I can remember we had water there every year that I was there, sufficient to cut some hay; except the last two or three years when we had too much water. I know we sold our place, and it seems to me that the reason we sold it was because we couldn't cut any hay.

The water did not come up to the same point on our place every year. The first year we were there I don't think the water got over the main channel where the bridge crosses. In fact, I am sure it did not, because we raised grain where our house first stood. When we went down there to live we built on the northwest side of the Narrows or the bridge, put in grain there, and threshed the grain. (R. 1338–1339.)

Mr. BLACKMAR. Q. Then in after years you did get some water?

A. Yes.

Q. The amount of hay that you cut depended a good deal on how much overflow you got?

A. Yes; it did.

Q. Did the water come up to the same point every year?

A. No; the bridge at the Narrows was built while I was there. It was never washed out that I remember of. The bridge was not raised or lowered while I was there; but it has been raised since, because I can see that it is higher than at the time I lived there, and it is a different bridge. (R. 1340.)

Cross-examination:

My father's (Albert Henry Hembree) place that I have referred to that he homesteaded was on both sides of the Narrows, and I think, although I am not positive, that he got a patent to it from the Government. We joined the Henderson Elliott place. I think a man by the name of Mowman is the present owner of the place on the north side (of the channel) and northwest of the Narrows.

(R. 1341.) The one place was on the southeast side of the Narrows and the other was northwest of the Narrows, below the Henderson Elliott place; that would be about the south side. I am not positive but my father, a little later, might have obtained a patent to that land. (R. 1342.)

Where we lived at that time, on the north side of the Narrows, and on that part of the land, there was no channel between our place and the Henderson Elliott place. (R. 1342–1343.)

The width of the channel between our land on the southeast side of the Narrows and the Henderson Elliott place on the north side of the Narrows, varied. In the early part of the spring, in 1890, 1891, and 1892, the channel filled up probably 100 yards across at the narrowest place there.

Part of the land next to the channel that my father got a patent to was flooded so that we could raise crops on it. In some years we went out northwesterly of the surveyed land.

I was there when Mr. Neal ran his line across there (R. 1343), but I do not know exactly where he ran it. I just remember him stopping at our house and doing some surveying. (R. 1344.)

We cut hay below the Neal meander line, that is, on the north side, the northwest corner. As the water receded, I could not say how far below the Neal line we were able to cut hay. As well as I can remember it would be about 50 or 75 yards, something like that.

Mr. LILJEQVIST. Q. In your judgment, did the water come up to that Neal line onto your deeded lands?

A. They did in later years. The water was all over it.

Q. What do you mean by that?

A. I mean in the nineties, what they call the high water. I was not there in 1889. (R. 1344–1345.) All I know about was from 1890 to 1899. (R. 1345.)

Mrs. FAY COMEGYS, called as a witness for the plaintiff, testified in substance as follows:

During our residence down there (at the Narrows) my father raised mostly wild hay.

Our place overflowed every year.

Mr. BLACKMAR. Q. And did the water on it come up to the same place every year, or did it change from year to year?

A. No, it changed.

Q. From year to year?

A. Yes.

Q. The amount of hay that you cut on that would depend a (R. 1411) good deal, would it not, on the distance that the water came up?

A. Yes, and went down again. The water did not go down to the same level every year.

Mr. BLACKMAR. Q. But during all of your residence there you had some water on your place every year, did you, or did you have some dry years and you didn't get any water?

A. Well, not while my father was alive, but since then there have been dry years and there has been no hay cut on the place. My father died in 1921. (R. 1412.)

Cross-examination:

When I moved in there on the McKenzie place (at the Narrows) which my father homesteaded for five years, I was a small child. He proved up on the homestead. (R. 1417.)

(Mr. Pecore: Mr. Alexander McKenzie got his patent on December 12, 1898. R. 1417.)

We had high water along about 1898 for several years, but I could not say what years. I have lived down there on my father's place (at the Narrows) off and on all my life, you might say. My father continued to live there until he died.

Mr. LILJEQVIST. Q. Where did the water ordinarily come in the springtime with reference to your father's homestead? Did it come onto the homestead?

A. Yes.

Q. About how much of it did it overflow in order to get the hay crop? (R. 1418.)

A. Oh, it would be hard for me to say how much of it overflowed.

I was there when Mr. Neal ran his line, and in the springtime it always came over the line; in the dry part of the year the water would go down below the line.

Mr. LILJEQVIST. Q. Is that the way it usually got year after year?

A. Yes, sir.

Q. Some years the water was high and it didn't get down below the line at all, is that what I understand, or what?

A. Well, I guess there were years the water was so high it didn't go down, and there were other years it was lower.

Q. In your judgment, excluding these very high years, how far up onto your father's homestead did the water get beyond (R. 1419) the Neal line?

A. Well, I never paid enough attention to it; I could not say.

Q. You know how far a city block is; 200 feet. Was it that far or farther? Can you give some comparison? You lived there for years and years. Can't you give us some idea?

A. No; I could not tell.

As the water went down, we tried to cut the tules and things down below the Neal line. (R. 1419–1420.)

We gradually expanded more and more toward the lakes there. The dry years he cu in farther. We were not living there in 1921; we were in Ontario, Oregon. I would not say that the water got on my father's homestead in the spring of 1921. I was not there. I was there after 1921.

In 1922, I think there was very little water in the lake.

Mr. LILJEQVIST. Q. There have been several years testified to since 1920. Now, do you remember any of those years if the water came back on your father's homestead?

A. Since then it has been dry. There is very little water. I would not say whether there was any on the homestead.

There was more water and snow in the early days. It has been drying up for the last 20 years. (R. 1420.)

Mr. MARION HORTON, called as a witness for the plaintiff, testified in substance as follows:

From time to time I have been down around the place called the Narrows. I have crossed that bridge there a good many times in late years. Along about 1893, 1894, or 1895, I saw the water there almost up to the first old bridge that was put in there. (R. 1471–1472.)

I have crossed there a good many different times and in a good many different years since then, when it was dry; but I could not say what years. (R. 1472.)

Mr. FRED HAINES, called as a witness for the plaintiff, testified in substance as follows:

In 1889 I went into the mercantile business and stuck pretty close to it for about 40 years. My brother (Charlie Haines) and I started a business at the Narrows in 1892, and I was back and forth some, but not very frequently.

My brother and I were in partnership there at the Narrows for five or six years, then I sold out to him and he continued the business until 1916, in which year he died. (R. 1519.)

I did not assist in the freighting business during the time I was a partner with my brother in the store at the Narrows; I left that all up to him; he did all of the freighting there.

During those five or six years I went down there to see my brother perhaps two or three times a year, and during those times, I would cross the bridge at the Narrows.

I have never passed there (the bridge at the Narrows) when the water was up to the floor of the bridge.

I have passed there when it was absolutely dry underneath it. I think it was dry underneath (the bridge) about 1922 or 1923, when I went down there and bought some cattle.

I really do not recall any time when it was dry during the time I was in business with my brother there; that was really before the country started to get drying up so bad. (R. 1520.)

(No cross-examination.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never visited at the Narrows when there was as much water as there was that season (June, 1899). (R. 1629.)

Mr. GEORGE WASHINGTON SIMMONS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The year we were not able to cut hay because it was too wet, about 1894, was the same year in which I saw the water to the level of the bridge at the Narrows. I do not remember that I have ever seen the water up to the top of the bridge, besides that one year.

I imagine the present bridge is at about the same (level) at the ends, but it is lower in the middle. (R. 1751.) The new one is lower in the middle than the old one was.

Mr. LILJEQVIST. Q. In the springtime you have seen the water out along the lane there on the west side of the bridge as you turn north toward Burns?

A. Yes; I have seen the water clear over the road, but it didn't do that very many years; I don't think it did it as late as 1919 and 1922; I was not down there, I don't know. (R. 1752.)

Mr. JOHN R. JENKINS, called as a witness for the plaintiff, testified in substance as follows:

I have been around the place called the Narrows; the earliest I think was in either 1896 or 1897, and I continued to see it off and on most every year since that time. I have been by there at all different seasons of the year. I have been by there when there was no water running through the channel at the Narrows. (R. 1814.) The earliest year that I did not see any water running under that bridge at the Narrows was probably along about the nineties, somewheres around (between) 1890 and 1900. I usually saw the channel dry around in the fall.

I have seen other years with water in the channel. I have not seen the water up to the floor boards on the bridge. (R. 1815.)

Cross-examination:

Mr. LILJEQVIST. Q. Many years it got so wet they could not hay until very late in the fall, at least?

A. Well, they would generally start in along August and September, and they would be haying quite late then.

Some years I saw a lot of water under the bridge at the Narrows in the springtime. I should judge the water would probably be three or four feet under the bridge there. I never saw water go over the bridge. I have seen water there in the spring of the year on both sides of the road as you go north after crossing the bridge. (R. 1816.)

Mr. LILJEQVIST. Q. In other words, it backed up until it was on both sides of that graded road there?

A. Yes; in the spring of the year.

Q. Has that road been raised any higher recently?

A. I have not been down that way for several years. (R. 1816.)

Q. Didn't that water come back around both sides of that road north of the Narrows as late as within five or six years ago?

A. It might have the last high-water year we had. It has been some time since we have had any high water. (R. 1817.)

Mr. JEFF CAWLFIELD, called as a witness for the plaintiff, testified in substance as follows:

I remember the place called the Narrows pretty well; I have been there at all seasons of the year, and in different years. Some years the water would be high, and other years it would not be so high; it would vary, of course. I have seen the channel down there dry, and at other times I have seen the water there standing in pools. (R. 1892.)

e. 1900–1910

Mr. JOHN EDWARD LOGGAN, called as a witness for the plaintiff, testified in substance as follows:

I have crossed the bridge at the Narrows a good many times, after the bridge was put in there. (R. 1479.)

Making the crossings there at the Narrows, I have observed at different seasons of the year, and different years, the water stages.

I recall once, possibly about 1903 or 1904, when the water was up on the sill of the bridge, and I never did see it when it was up to the floor of the bridge.

I passed there a good many times when there was no water running under the bridge at all. (R. 1480.)

Cross-examination:

I was county assessor of this county at this time; I was making trips all over the county and I was there(at the Narrows) two or three times a year.

I just recall that one time being there in the spring, but I think I have been there other times, but I happen to recall that one time. (R. 1484.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Do you remember floating tule islands going down toward the Narrows and blocking it up?

A. No, sir.

Q. Did it block any portion of it, these floating islands?

A. Not that I know of. (R. 1640.)

Mr. CLAUDE MCGEE, called as a witness for the plaintiff, testified in substance as follows:

At the time I was at the Narrows with Mr. Davis in the fall (R. 2011) of 1907 or 1908 (R. 2009) it was dry or practically so there (in the channel) at that time; there may have been just a very little bit of water, but practically dry. (R. 2011.)

Cross-examination:

I was not so well acquainted with the (Malheur) lake (at that time I was at the Narrows with Mr. Davis); I don't remember ever being around the lake, only right at the Narrows. (R. 2011.)

I have been at the Narrows when it was not dry (in the channel).

At one time I saw it (the water) run over the grade on both sides of the bridge.

Mr. LILJEQVIST. Q. About how wide would it be there in the springtime?

A. Well, it varied, I guess. Right due west of the Narrows is—I don't know whether you would really call it the Narrows—it would back up there into Mud Lake for quite a long ways.

I was not there in the spring so I do not know where the water came up to usually every spring. The springs I were there the water came up at times, and at times it did not; it varied. (R. 2014.)

I do not know how deep it was there when the water was (R. 2015) the highest that I saw it. I think I saw it (the water) probably about a foot and a half from the floor of the bridge.

The year I was with Mr. Davis when that level was run, the fall of 1907 or 1908, the water was low that season; it was there anyway at the Narrows. (R. 2015.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have seen the water at the Narrows (R. 2122); I have seen it quite high there; I have seen it as though it was going to take the bridge out, but I guess it didn't.

Mr. LILJEQVIST. Q. Now, let me ask you this question: From your knowledge of the country, have there been times when there have been nothing but pools at the Narrows, when there have been big bodies of water in the lake?

A. Well, there has been quite a lot of water. Of course, it naturally goes dry down there before the other water does, but not so much. (R. 2123.)

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

My father (Henderson Elliott) used to raise grain there (on what was known as the McKenzie place), but I do not remember much about it. The water we got on our place backed up from the (Malheur) lake. I do not remember what years it was impossible for us to cut hay on that place, but I know there was several years we did not cut any hay at all, on account of the wet weather. (R. 2218.)

Mr. BLACKMAR. Q. During the time that you were living there that you can remember, did this (Malheur) lake come to the same point every year?

A. Oh, no.

Q. What about it, did it——

A. (Interrupting.) No; the lake didn't come to the same point every year.

Q. It varied from year to year?

A. Oh, yes; it would in every year.

Generally speaking, down in that part of the (Malheur) lake (near the Narrows), the season of the year the water commenced to go off depended a lot (on the snowfall); sometimes there would be lots of high snow, and the lake would raise lots later, but we hardly ever hayed there until in August. (R. 2219.)

When the water receded it did not recede to the same point every year.

Mr. BLACKMAR. Q. And that also, like the rise, changed from year to year?

A. Yes; it changed from year to year. (R. 2220.)

f. 1910–1920

Mrs. OLLIE DARSEY, called as a witness for the plaintiff, testified in substance as follows:

In the years 1915 or 1916 until 1919, my husband and I had a homestead eighteen miles southeast of the Narrows, and while I never lived at the Narrows, we crossed back and forth there. Lots of times I have seen water there at the Narrows, but of late years it has been dry.

Mr. BLACKMAR. Q. Have you ever seen the water there so deep that you had to swim your horses?

A. I expect I did, but I never tried to swim a horse. I couldn't say about that, whether it was that way or not. I suppose under the bridge there were times when you could swim a horse in the spring of the year.

Q. But in the crossings that you made you do not think it was deep enough for that?

A. No; I do not think they ever were. (R. 653.)

SPECIAL MASTER. Q. What about the bridge at that time?

A. Well, the bridge was there at that time, and we crossed on the bridge, but the stock went under the bridge. I suppose it was not very miry at the Narrows. Right in the channel I suppose they crossed back and forth and swam. (R. 654.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, testified in substance as follows:

In August, 1912 (R. 1993), when I was at the Narrows, there was water there; whether it was flowing or stationary at that time, I could not say, but there was water at the Narrows. (R. 1994.)

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

Our family raised some grain down there about 1912, where he (Mr. Liljeqvist) showed this lake south of where the house is now. We raised oats and barley there. (R. 2229.) We had a dam in there, which kept the water out that year, and by means of that dam we raised that crop of grain there. (R. 2230.)

Recross-examination:

Mr. LILJEQVIST. Q. In other words, to raise the crop of grain you had to dam the water out?

A. Had to dam the water out. (R. 2230.)

g. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The time I first saw the lakes, the 11th or 12th of April, 1931, there was no water running through the Narrows at all. (R. 90.)

3: Vegetation

a. 1880–1890

Mr. JOHN L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

Our land extended to the high land, we did not have any sagebrush up around what we called the salt grass line; from the border of the lake it reached up there.

I do not recollect any dead sagebrush between our house and the channel. (R. 886.) The principal part of our enclosure was covered with tules; at that time we owned on both sides of the channel; it is a square; the tracts reached across the channel, adjoining Mr. Elliott's place on the north and east. Our land on either side of the channel was all tules, up to the border of the lake, or the meander line on either side. Now, to the west side again we had about 30 or 40 acres there that we had ploughed, and that had been covered with tules, but we ploughed them under and broke them up. (R. 887.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, Mr. Hembree, was there any indication from the nature of vegetation between your deeded lands and the unsurveyed lands northwesterly of the Neal line showing a difference in its character? (R. 903.)

A. Well, after you got by what you call "hit the border of the tule line," why, there was practically no difference as we found it.

The tule lands were not in the approximate border of the Neal meander line. There was what we call a flag tule, if you (R. 904)

term that tule, and where the water stood on the land for any length of time it ran into kind of a flag tule, and not what you call the round tule.

Mr. LILJEQVIST. Q. And then was it your judgment along that lake that where the meander line ends it started to get flags, and then as you went in deeper, you got tules?

A. Yes.

Q. And above the meander line, above the surveyed lands, when you got above the tules, and then above the flags, did you then get to the salt grass?

A. You might say there was a strip in there which possibly would produce a little; maybe a scattering salt grass before it broke into what we called the solid salt grass.

Q. In other words, was the salt grass that grew immediately between the lake proper and the cultivated land around that property?

A. The salt grass grew, I will say, in this bare space, you might term it, and that grew up to a line of either sage (R. 904) brush or greasewood.

Q. And from the line of sagebrush and greasewood there was a space of salt grass between the greasewood and the flags and the tules, is that correct?

A. Yes; that is right.

Q. And that edge of the salt grass and the flags, was that the normal line demarked by vegetation between what was called upland and lowland?

A. Very nearly. (R. 905.)

Mr. WILLIAM HENRY MCKENZIE, called as a witness for the plaintiff, testified in substance as follows:

I know where the Neal meander line is on both sides of the Narrows. The vegetation near the Neal meander line consists of sugar grass, tules, salt grass, and wire grass. (R. 2147.)

b. 1890–1900

Mr. GUY L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

When we first went down there (to live at the Narrows) I do not remember any salt grass where we farmed then. It was what we called tule tussocks; there would be bunches there, and they would throw the plough out of the ground, they were probably six or eight inches through; we called them tule tussocks. The ground was very mellow, as we called it, and there was nothing to bother us only these tules, and we piled them up and burned them, then we put in about 15 or 20 acres of grain, we planted oats or barley. (R. 1340.)

I remember we ploughed up lots of buffalo heads (R. 1339); my father said they were buffalo heads; at that time there was no salt grass, but I was down there last Sunday and I saw there was some salt grass there now, at the place where we planted our grain. (R. 1340.)

Cross-examination:

The place that I talked about on which we cleaned up the tules was not on patented land; it was northwest of the Narrows; nor did we subsequently obtain a patent to that land; I do not know whether it was surveyed or not, but I know that was where we lived, and that was what we fenced. I know where the Henderson Elliott place was, but I don't know whether I was there when he got a patent to his land. (R. 1342.)

I am not positive that the place where we cleaned up the tules was on land which is still unsurveyed. (R. 1343.)

Going about a mile above the Narrows bridge in a boat we struck the tule barrier about a quarter of a mile above the bridge. There were practically all tules through there. I know we got in some going through. I do not know what the condition was above that point. (R. 1345.)

c. 1900–1931

Mr. Hadden Elliott, called as a witness for the plaintiff, testified in substance as follows:

Our place (what was known as the McKenzie place) down there (near the Narrows) had several kinds of grasses on it (R. 2218); there was salt grass; what they call sugar grass, and wire grass.

Salt grass will grow on most any of that soil if the water is not over it; the water kills off the salt grass if it stands on it too long; I do not know how many seasons it would take to kill off the salt grass; it will not kill it in one season, unless it stands too deep over it; if it gets too deep it might kill it. (R. 2219.)

4. Banks

a. In the early days

Mr. John L. Hembree, called as a witness for the plaintiff, testified in substance as follows:

Right around the Narrows and to the east toward Malheur Lake, the lake did not appear to have any banks, it was just a slope, not what you would define as a bank. (R. 887.)

Mr. William Henry McKenzie, called as a witness for the plaintiff, testified in substance as follows:

There is no bank on my home place there (at the Narrows—R. 2147). (R. 2152.)

F. Mud Lake

Evidence relating to

1. Water conditions

a. In the early days

Mr. Lester Marion Hamilton, called as a witness for the plaintiff, testified in substance as follows:

I do not know that we ever measured the ordinary depth of Mud Lake. The only way we could tell what depth of water there was there would be to use an oar occasionally; sometimes the oar would touch bottom; most always did; there was plenty of mud underneath, and it was difficult to tell whether it was mud or water. I can not tell whether the water in Mud Lake was a little deeper than that in Malheur Lake, because I never went out on Malheur Lake far enough to tell that. (R. 632.)

Cross-examination:

Taking Mud Lake as it extends on the northwest side of it, there was a distance there from one-quarter to one-half a mile that they would cut (hay) on; that was covered with water in the early season. That was the distance that the water would spread, or rise and fall, during those seasons that I spoke of that I knew the lake quite well. (R. 635.)

b. 1880–1890

Mr. George Washington Simmons, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never was on the lakes much, any of them, except when frozen over.

I never measured the water in Mud Lake.

Mr. Liljeqvist. Q. In your statement (to counsel for the Government) you gave how deep Mud Lake was, and I wondered how you found that out, from what you base your measurement.

A. I just guessed at it.

It might be more or less from what I thought. (R. 1752.)

c. 1890–1900

Mr. Richard A. Smith, called as a witness for the plaintiff, testified in substance as follows:

All during the nineties up close to 1900 I lived on the southwest corner of Mud Lake. At the time I settled there it was unsurveyed land, but it was surveyed while I was there and I obtained a patent to it.

(NOTE.—It is located in lots 2 to 6, inclusive, of section 33; and the southeast quarter of the southeast quarter of section 32, T. 26 S., R. 30 E., south of the lake.—Pecore. R. 1299.)

While I was there I had a cabin on the place and I raised crops there—hay. There was some sugar grass where the water would get (R. 1298–1299) over; and some salt grass.

I was not able to get a crop there every year. When I first settled there that ground was covered with old dead tule stubbles or tufts which I cleared out with a pitchfork and then burned them off. Then the grass came through, but I could not have cut on that land with the tules that high on it. It was about six or seven inches thick lying on the ground.

From time to time as the years went by the land was overflowed by the lake.

I never cut hay on the north side of Mud Lake. Nobody ever cut hay in what you would call the lake. (R. 1300.) I do not think there are many islands in Mud Lake. During the time that I was there there was water in Mud Lake every year. As years went by the water did not come to the same point every year. (R. 1301.) Some years it wouldn't be so high and others it would be higher. It depended upon the snowfall in the mountains. It changed from year to year.

The lake would raise on the muddy ground where I cut the hay and at the time I did the haying the water would have receded; would have evaporated off that land so that I could cut my crop.

The water stayed about the same in Mud Lake; that is, only from the raise in the fall; it would be about the same. (R. 1301.)

Cross-examination:

Mr. LILJEQVIST. Q. Then, Mr. Smith, (on the map) which has been offered in evidence as Plaintiff's Exhibit 4, the Neal meander line is shown here as the line where I indicate. [Indicating to witness on map.] And this whole area in here east of the Sand Reef is unsurveyed now, and that was the part that was covered with water?

A. No; it wasn't covered with water. It had been.

It had been covered with water at times. Before that (Sand Reef) broke through in the nineties; that year it was covered with water, and made quite a lake there.

I came to this country in 1889 and I settled at the Narrows in 1891. (R. 1306.) I do not know when the Sand Reef broke through and I was not there. In the summer and spring when I came into this country I saw water there east of the Sand Reef.

I settled south and west of Mud Lake, and at that time it was unsurveyed land. Mr. Neal ran the survey line on the northerly line of my property. He surveyed that land in there (R. 1307), and I got a patent to it from the Government. I could not tell you where the water from Mud Lake came to with reference to where Neal ran his survey line northerly of my property, in an average season,

because there is no average season. The water didn't go the same. (R. 1307.) In the springtime the water with reference to my deeded land backed out from the lake, gradually all around it; and there was an outlet through my place on the east, and the water ran on down through (there) into Harney Lake and one of the channels.

I lived there nearly all during the nineties.

Mr. LILJEQVIST. Q. And during the nineties did the water of Mud Lake get high enough to flood your deeded land south of the meander line?

A. Most of it it did.

That made the hay crop. The depth of the water on my patented land varied according to the height of the water. Some years it might have been eight inches deep, and others about twelve inches.

Mr. LILJEQVIST. Q. And when were your patented lands uncovered?

A. I would start to cut (hay) in July some years; and in some years in August.

The water stayed out in front of my place in Mud Lake all the year round. (R. 1308–1309.)

There were no ranchers west of me and nobody secured patents to lands west of me while I was there.

Mr. LILJEQVIST. Q. Were those surveyed lands to the northwesterly of you, following around the edge of Mud Lake, covered with water in the spring? Were they flooded at all in the (R. 1309) springtime?

A. When the water would raise from Mud Lake, and come out on my land, there was an outlet that came through my place and Ware's (place) that made another lake there. Ware's place was situated on the northwest corner of the (Mud) lake, just across on the opposite corner, right north of me. (R. 1309.)

I guess the property that we are talking about now is the property that Billy Dunn now owns. Billy Dunn didn't have any land there, then. Mr. Ware and myself owned the land.

Mr. LILJEQVIST. Q. Did Ware's property get flooded in the spring, the same as yours?

A. The same thing.

There was nobody there to the north or northeast of my place, or along the easterly side of Mud Lake, until you got up close to the Narrows. They got some beneficial use of the water from the overflow along the edge of the lake. (R. 1310.)

Beyond the edge of the tules of Mud Lake which extended from 50 to 200 yards from the patented lands or the edge of the lake, there was open water. (R. 1311.)

Mr. LILJEQVIST. Q. And during the nineties did that entire area east of the Sand Reef become covered with water in the springtime?

A. Not a great deal.

I do not know where the Neal meander line was around there in that area of about four square miles.

They say that in recent years Mud Lake has gone entirely dry. The wind blows down there. (R. 1313.)

Mr. LILJEQVIST. Q. It is not surprising at all that a person surveying that land would find on the south side of Mud Lake sand and earth considerably higher north of your line than it was in the nineties, isn't that correct?

A. Well, I don't know.

I haven't been there for thirty years, and I do not know much about the drifting sand filling in along the edges of Mud Lake. (R. 1314.)

Mr. LILJEQVIST. Q. It doesn't surprise you that in thirty years the country has changed with the drifting sands, does it?

A. No, sir. (R. 1314.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

In that part of Mud Lake (where I used to live by the Richard A. Smith place) in the springtime there were lakes in there that continuously had water, but when we first went in there (in the spring of 1891, R. 1315) there was no water in there at all. (R. 1316.)

In running our cattle on that grass down there it was not necessary to add some grain to the grass feed; we never did; the stock got their entire nourishment off that grass. (R. 1316.)

With reference to the pasture down there we kept the cattle in there in the winter. There is not enough grass there to feed them in the winter, but on the place the folks had (near the Richard A. Smith place) we put up hay. It didn't belong to me, it belonged to my aunt. My father was running the place, but it belonged to Sarah E. Thompson. I assisted in putting up the hay there.

We got an overflow of water on our place from the (Mud) lake every year.

There were about three years that we did not cut very much hay. It depended upon how high the water came up. (R. 1317.)

I do not believe that the water came up to the same level every year; I don't remember it that way; didn't pay much attention, but it varied quite a bit in depth there.

Mr. BLACKMAR. Q. Wouldn't the fact that you couldn't (R. 1318) cut the same quantity of hay every year indicate to you that the level of the water changed from year to year.

A. Yes, it did. (R. 1318.)

Mr. BLACKMAR. Q. Those years when there was no water going through the Narrows, Mud Lake would recede too, would it? (R. 1323.)

A. Yes, sir. It was greater than it was before. When the water would stop through the Narrows channel, why then there would be a fast flow in Mud Lake. (R. 1324.)

Cross-examination:

I lived on Mrs. Sarah E. Thompson's land, which is located in the northwest corner of Mud Lake; more on the north slope of the lake. The land was patented to William E. Bailey, that is the property we lived on. (R. 1325–1326.)

We got overflow water from the lake onto the patented land, and that was what caused the hay to grow.

I didn't pay any attention to the meander line. There was none when we went in there. I was in there when Mr. Neal ran his meander line, but I don't know anything about that line; didn't pay any attention to it. I went out and looked at the section corners where they dug their holes and put their line, but I never was interested in the meander line, and paid no attention to it.

In the springtime the water would go up on the Bailey land at certain places to a greater depth than at others (R. 1326–1327); at one place there seemed to be a raise that ran out into the lake; it came up for a quarter of a mile, and in other places it went anywhere from one to two hundred yards. The main body of water was southeasterly of Mrs. Sarah E. Thompson's land (or the Bailey lands). (R. 1327.)

Dr. Llewellyn Eugene Hibbard, called as a witness for the plaintiff, testified in substance as follows:

In the season of 1899 when I first saw Mud Lake, it was a vast body of water that season, but I should judge that the water was what was called in court, one of those high-water years. At least, I have never at any other time seen the water at any higher level at the Narrows, or about Mud Lake than it was that season, so that it had the appearance to me of a very fine large lake.

There was not any obstruction for a couple of miles. I rowed straight toward Harney Lake from Charlie Haines' store at the Narrows; and I came to a point that we called Cane Island. It was a little island that had very tall grass, eight or nine feet tall, of a whitish color and we called it Cane Island. We landed there and had our lunch on that island. It was the first place we came to going toward Harney Lake on which we could land the boat. (R. 1613.)

Cane Island was situated about two miles from the Narrows, in a direction a little south of west. The water runs from Mud Lake into Harney Lake, and that was what I was heading for, and I was aiming to go as straight as I could, but I didn't get there, however, and so I might have been off the line. (R. 1615.)

(Note.—Cane Island is pointed out on the map, Plaintiff's Exhibit 4, as in the northeast quarter of section 4, T. 27 S., R. 31 E., south of the lake.—Pecore. (R. 1614.)

Special Master. The Doctor identified that as a point (R. 1614) on a straight line from what other point? On a straight line two

miles from the Narrows? He doesn't identify the place except by distance?

A. I can't identify it, and it is a guess as to it being two miles; that is simply a guess. (R. 1614–1615.)

Cross-examination:

The channel from the Narrows down to Mud Lake varied in width with reference to the open water that was free from the tules belt at the time I took that boat trip in June, 1899, from Charlie Haines' store out to Mud Lake toward Harney Lake, but in a general way I would say it was a body of water south of the tule belt.

Mr. LILJEQVIST. Q. Then when you got down to Mud Lake what did you find?

A. I had never heard those terms before, and there was such a body of water I didn't really know what was Mud Lake, and I was not particularly interested. I was trying to get to this outlet that I knew joined this other lake, and I was trying to go as straight as I could in a way that took me south of that tule belt. I could see north of me, and I saw tules, and I (R. 1627) passed along where this Cane Island was, and I worked to the west, but I didn't get in very much tules on that trip.

To the south of the tule belt I would say there was at least three-quarters of a mile of water free from any tules. To the north of Cane Island the water came right to the tule belt. (R. 1628.)

Mr. LILJEQVIST. Q. What was this place you pointed out on the map where this deeded land was?

A. It was a clear bit of water, and no tules sticking up at all.

From Cane Island to the south there was a space of open water about three-quarters of a mile. To the north of Cane Island the tule belt came to the edge of that island, and as far as I could tell to the north (R. 1628) there were tules and water and no more indication of land anywhere.

Mr. LILJEQVIST. Q. In later years did you go down that same channel all the way to Harney Lake?

A. No; I never followed it in any one trip to follow the windings and in order to ascertain what the channel would be. I have come up a good long ways, and I know the movement of it, and it finally fades out, and there is nothing that I would call a channel.

I found a lot of open water to the east of the Sand Reef.

Mr. LILJEQVIST. Q. On that map there, there is a space several miles in length, and nearly two miles in width, east and west: Is that the area where there was a lot of open water?

A. Yes, sir.

I never again saw it (that area east of the Sand Reef) with as much water as that season (June, 1899); to me that was the peak. (R. 1629.) I never visited either at the Narrows or Harney Lake when there was as much water as there was that season; each time it has been drying up, but that season there was plenty of ground

sticking out, and sagebrush was growing against the sand dunes; and Mud Lake, I could walk well out in sagebrush; I would say, anyhow, 200 yards north of the channel. I was coming to this water that was supposedly Mud Lake. There (R. 1629) was a higher piece of ground, a warm spring in there, and the water would have to be very high, as I heard somebody testify, but it was not that way, the way I saw it. That was the year you could shoot from the sand dunes. There was quite a fall; I would say there was a three or four foot drop, as the water went out of Mud Lake right there within 100 yards. (R. 1630.)

d. 1900–1910

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

During the period I lived there (near the Narrows) there was a good deal of tules in Mud Lake, but there was lots of open water in Mud Lake, too. I can not give you the approximate number of acres of open water that was there. The open water would be practically the same every year in Mud Lake. In later years I have seen Mud Lake dry up; it is dry now, I believe. (R. 2220.)

Cross-examination:

We cut some hay around the edges of the (Mud) lake. The water just backed over there from the lake.

Mr. LILJEQVIST. Q. Mud Lake, or did that lower part extend from Mud Lake east to your deeded lands?

A. Yes.

Q. This place southeast of the house—on the map there is apparently a great big bay, it looks like here [indicating]. Did you see anything on the ground while you were here that resembled a body of water sticking out toward you south or southeast about a mile?

A. Yes; there was a lake there.

I think a man named Graves took up that property on the south side of that lake where the shack is marked on the map (Plaintiff's Exhibit 4). I visited him. (R. 2227.) I believe I have been across there in a boat.

Graves' property was not below the (Neal) meander line; it was all deeded land; he was a homesteader. I do not think he got any hay on his deeded land. (R. 2228.)

e. 1910–1920

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, testified in substance as follows:

I have been down around Mud Lake in connection with my work; I was around Mud Lake in 1912, and I have made various trips through that section since.

Since 1912, I have found very little open water in Mud Lake.

There was quite an extensive body of shallow water there in 1912. I can remember certain species of birds (R. 2000) wading out several hundred yards from shore; birds with legs seven or eight inches long; the water was not very deep. Since then, I have seen water in the spring several times only. On my last several trips down there it (Mud Lake) was entirely dry. (R. 2001.)

f. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

On the same day we visited Malheur Lake for the first time in April, 1931, I visited Mud Lake. (R. 112–113.)

There was no water in Mud Lake at all on that date, and no water inside of the meander lines east of the Sand Reef of Harney Lake. (R. 113.)

We came down and crossed the Narrows; went down to the Sand Gap; then back up north of the Sand Gap, and east of the Sand Reef to a point somewhere near the south boundary of section 36, T. 26 S., R. 30 E., north of the lake. There was no water in that area at all at that time. (R. 114.)

There has never been any water at all in Mud Lake since I have been here. (R. 121.)

2. Vegetation

a. In the early days

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

My work with the cattle took me to Mud Lake most of the winter, every winter. There were grasses on the north side of Mud Lake, then there were some all around the lake, but on the south side (R. 502) of Mud Lake there were no tules; it was mostly salt grass. (R. 501.)

In the wintertime, the biggest part of Mud Lake was covered with tules, and that was the condition there before the Sand Reef broke through (in 1881). (R. 502.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Taking Mud Lake as it extends on the northwest side of it, there was a distance there of from a quarter to a half mile that they would cut (hay) on. (R. 635.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In the early days I did not know such a place as Mud Lake. There may have been other people that knew it but I did not person-

ally. The lower end of it was mostly swamp and tules. (R. 742.) I do not know how deep it was. (R. 743.)

b. 1870–1880

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I came in on Mud Lake in 1879; I am familiar with the country northwest of it somewhat. I believe that country was settled in comparatively recent years, and the soil was good, but it was of a sandy nature more than around Windy Point. It is a different kind of soil.

It is a different kind of soil northwest of Mud Lake.

When I was at Mud Lake, there was not a settler anywhere near it. There was no settler northwest of it as close as the OO Ranch is now. There was no one in that part of the country at all. Probably there may have been settlers of recent years. I do not know whether the configuration of the country has changed; I have not been over there since. (R. 1803.)

c. 1880–1890

Mr. WILL Y. KING, called as a witness for the plaintiff, testified in substance as follows:

I was at the Sand Reef at the time it broke through. (R. 308.)

Cross-examination:

From the Sand Reef we worked right up toward the Narrows and went around that way.

In those days Mud Lake had tules in it. (R. 314.)

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

I have been east of the Sand Reef in Mud Lake, and there are quite a few tules there almost up next to the Sand Reef. (R. 194.)

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, testified in substance as follows:

In September, 1885 or 1886, I was sent down with some other fellows by Mr. Foster after some cattle down on Mud Lake. (R. 953.) At that time there was a lot of tules there in Mud Lake, but I do not remember as to the water conditions. I know we could see open channels out there. We did not have to go into the tules to get the cattle out, as they were down on the Sand Reef. (R. 954.)

Cross-examination:

With reference to Mud Lake I am not saying that there was not water through the tules. I could see open channels through Mud Lake. (R. 954.)

d. 1890–1900

Mr. CURTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

The character of vegetation in Mud Lake (in the nineties, R. 1046) consisted of tules that grew in the lake. There were no islands out there in Mud Lake proper. At the edge of it there were some ridges, and in high-water periods there were some islands, of course; but out in the lake about 200 yards from the shoreline there were a great many tules. I have been out there among those tules, and it seemed they formed a tule bed with roots underneath that would be solid so that you could go out and (walk) on them when the water was low without getting in the water; from there onto the south side of the lake it was open water most of the year round, with tules on the south edge of it all the way around. (R. 1047.) The width of the tule patch on the south side would be about 100 yards.

There is a high ridge that runs around the east side of Mud Lake that has greasewood and salt grass on it. (R. 1048.)

Mr. RICHARD A. SMITH, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Do you recall one year when there was considerable water in Mud Lake, and then all of a sudden it commenced to go out, and to run through the Sand Reef, do you remember that?

A. Yes; I remember this one year, but that cut through the Sand Reef, I don't think to my opinion it would have any effect upon taking Mud Lake down. (R. 1311.)

Cross-examination:

The depth of the tules into the lake from the edge of it or from the patented lands varied. Some places it might be 200 yards, and at other places (R. 1310) 50 yards (R. 1311).

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

Down there in Mud Lake where I lived near the Richard A. Smith place the grass or pasture consisted mostly of salt grass and different foxtail, and on the edge of the water was quite good feed. We also had some larkspur, and it was kind of poisonous, and I know it caused quite a bit of trouble with the cattle. (R. 1316.)

Down on the place which my father was running on the south side of Mud Lake, but which belonged to my aunt, Sarah E. Thompson, we got mostly wire grass and sugar grass; and of course we cut quite a bit of tules along with the hay; there used to be quite a little bit of bluejoint grass, and a scattering of redtop, but nothing to amount to anything. (R. 1317.)

There were a great many tules around Mud Lake during the time that I was there; in places they were farther out into the lake than

in others. There was quite a little area around the north side where there were not any tules.

The width of that fringe of tules varied quite a bit; the widest that I know of would be in our field. When the land overflowed it caused tules to grow, and it was about half a mile in the widest place from the tules to the water. (R. 1322.)

There were no tules out in the center of the lake. There was one little spot of tules near the north shore, about 100 or 150 yards. At that time we thought it was a kind of an island, but it was just a tule turf floating in here. I saw it afterwards when it was dry. (R. 1323.)

Cross-examination:

The distance to which the tules extended out into the water from the Bailey lands (or Mrs. Sarah E. Thompson's lands) would depend upon whether it was high or low water. On this Bailey (or Mrs. Sarah E. Thompson) land in high water there were tules, and there were times the tules would be out three times as far as at other times. After the tules were cut down, then it would come back in sugar grass. I should have to know whether it was in low or high water times that reference is made in order to give the definite width that the tules extended. The greatest depth of tules I ever saw I think would be 500 yards from the water line. (R. 1327.)

With reference to the high water of the lake, my experience is that salt grass grows pretty near anywhere that the water doesn't stand on it continually. I have seen it not exactly above the high water. I have seen it when the high water was over it, and it would not kill it. (R. 1332.)

I never thought the splashing of the water would deposit the alkali that caused the salt grass to grow along the edges of the lake. I thought that nature made the root to grow there. I didn't think there was anything else but roots growing on the ground. I have seen salt grass along the edge of the water, but it didn't stay there very long when the water went off, and when the water stayed on, I did not notice that it killed it, only I have cut it for hay. The salt grass did not grow if the land was flooded all the time. I never saw salt grass grow to any extent except on a little ridge that was above the water's edge. (R. 1333.)

Mr. LILJEQVIST. Q. Isn't it true that the salt grass is the vegetation that grows immediately above the ordinary waters of the lake?

A. Why, I think so. (R. 1338.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

In 1899 when I rowed straight with the boat from the Narrows toward Harney Lake, there wasn't any obstruction for a couple of miles. I stopped at a little island that we called Cane Island, which had tall grass, eight or nine feet high, of a whitish color on

it; there are not many tules in Mud Lake at that particular part of it. It was the first place we came to going to Harney Lake on which we could land the boat. Farther to the north of that line there were a great many tules, but on this line, in passing these places, in two miles we did not apparently come across any tules. (R. 1613.)

Cross-examination:

There were a lot of tules between the Narrows and Mud Lake, but only to the north. There wasn't in the route I took (in the boat in June, 1899, R. 1626). I stayed free from the tules. I went to the south. I was trying to get to this outlet (the gap in the Sand Reef) that I knew joined this other (Harney) lake, and I was trying to go as straight as I could in a way that took me south of that tule belt. I could see north of me, and I saw tules, and I (R. 1627) passed along where this Cane Island was, and I worked to the west, but I didn't get in very much tules on that trip.

To the south (of Cane Island) I would say there was at least three-quarters of a mile of water free from any tules. To the north the waters came right to this tule belt. We were at the (R. 1628) edge of the tule belt at Cane Island. The tule belt came up to Cane Island, and as far as I could see to the north (R. 1628) there were tules and water and no more indication of land anywhere.

The sagebrush was growing against the sand dunes (in June, 1899); and Mud Lake, I could walk well out in sagebrush, I would say, anyhow, 200 yards north of the channel. (R. 1629.)

e. 1900–1910

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

When we used to boat down there in Mud Lake, during the period of 1905–1906, we got stuck in the tules plenty of times, but not out in the middle of the lake. (R. 630.)

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

During the period I lived there (near the Narrows) there was a good deal of tules in Mud Lake, but there was lots of open water in Mud Lake, too. (R. 2220.)

f. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The vegetation in Mud Lake 1931 is scattered salt grass; a great deal is bare land without any vegetation to speak of at all, with greasewood around the margins of it.

In that portion of Mud Lake, east of the Sand Reef, a great deal of it has grown up in greasewood. The greasewood is not of very ancient date, it is of quite recent growth in the lower portions. There is not in this area any large open spaces of grass as you find up in Malheur Lake. (R. 113.)

g. Dead sagebrush and greasewood

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I have seen dead sagebrush in Mud Lake; the stalks were not very large; it is greasewood and a little (R. 505) sagebrush. Some of the bigger stalks are about three inches in thickness; probably some might be bigger; did not examine them right close; but I saw them there and they may be about three inches thick or bigger; I can not swear to that. (R. 506.)

Cross-examination:

I have seen dead sagebrush and greasewood in Mud Lake. (R. 517–518.)

After the Sand Reef broke through and the water went down, I saw greasewood all around Mud Lake. Maybe lots of it washed through the Sand Reef; I have seen some dead sagebrush in the bed of Mud Lake. (R. 536.)

Mr. WALTER B. PARKER, called as a witness for the plaintiff, testified in substance as follows:

I have not seen any dead greasewood on the Sand Reef, but down below the Sand Reef where the water had been I did; the Sand Reef slopes gradually up to the top of those sand dunes. Out there on the overflowed lands toward Malheur Lake, where the water had been is where I observed the dead greasewood. (R. 870.)

Mr. GEORGE FRY, called as a witness for the plaintiff, on redirect examination, testified in substance as follows:

About forty years ago, I saw some dead sagebrush or greasewood southwest of Mud Lake down near the hot springs—right near the Sand Reef, right out in the lake bed. It was either dead sagebrush or grease brush.

Mr. BLACKMAR. Q. And that means that that was pretty dry for some time, doesn't it?

A. Yes. (R. 1143.)

Mr. RICHARD A. SMITH, called as a witness for the plaintiff, testified in substance as follows:

I have not seen any evidences of dead greasewood or sagebrush around Mud Lake, except around the lake at the Sand Gap, before it cut through.

Mr. BLACKMAR. Q. That is, what you mean is east of a sand ridge or Sand Gap?

A. Yes, between there and Mud Lake.

I saw dead stubs around there. (R. 1304.) This dead sagebrush or greasewood, I should judge, covered close to three or four square miles. It was immediately east of the Sand Reef. Of course there were little ridges there that the water didn't get over, and on which probably there was some greasewood.

Mr. BLACKMAR. Q. Now, where was this dead greasewood?

A. Well, over this place [indicating on the map, Plaintiff's Exhibit No. 4]. Before this broke through, you see, it held this water up and made this Mud Lake.

SPECIAL MASTER. You are indicating a lake immediately to the east of the Sand Reef. (R. 1305.)

A. Yes, sir. That overflow made that.

SPECIAL MASTER. The overflow out of Mud Lake made that lake snug up against the Sand Reef, is that it?

A. Yes.

Mr. BLACKMAR. Q. And you are also indicating (on the map) that portion of the lake north of the Sand Reef as indicated on this map? (Plaintiff's Exhibit No. 4.)

A. It goes north of this cut; more so than it does south. (R. 1306.)

Cross-examination:

The branches were all gone from the stubs of the sagebrush and greasewood in that area east of the Sand Reef that subsequently became dry in the years when I saw it. I supposed that that sagebrush and greasewood had been killed by the standing water before the Sand Reef broke through. (R. 1313.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

I was in the court room while Mr. Richard A. Smith was testifying, and I heard the evidence which he gave with reference to certain (R. 1315) (dead) sagebrush stubs immediately east of the Sand Reef, and I recognized that locality. I have seen those stubs scattered around. I have never seen them in very large quantities, but I used to see them scattered through there. I used to ride through there quite often, nearly every day. Our cows would go down to that part of the country, and I was on foot and on horseback, all over there. (R. 1316.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. There is some evidence that in subsequent years all the area east of the Sand Reef dried up, and the channel went through, and that there was some sagebrush stubs in that area; did you see those?

A. No; I never noticed that.

Greasewood will stay in the water preserved forever.

Mr. LILJEQVIST. Q. So that if you find stubs anywhere in the bottom of this Malheur Lake, or Mud Lake, or the lake east of the Sand Reef, is there any human possibility of telling when that sagebrush grew? (R. 1372.)

A. Well, I would say no. Of course, any sagebrush stub that is exposed to the air deterioriates. (R. 1373.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

That very day when I went in a little boat about two miles from Charlie Haines' place out toward Harney Lake (R. 1613), I observed what was more interesting to me than other signs. As I rode along, and before we got to Cane Island, we passed over sagebrush.

Mr. BLACKMAR. Can we get Cane Island located, do you think, Mr. Pecore?

Mr. PECORE. Possibly, Mr. Blackmar, but I am not sure. I am suspecting that it was a name we gave to it. Anyhow, it was an island where cane grew.

Mr. BLACKMAR. Supposing you step over to the map (Plaintiff's Exhibit 4), Doctor, and see if you can give us some idea as to where that Cane Island was.

A. Here was where we were going. We started right in this direction, and if that would represent two miles—I would say about here somewhere—is where we stopped and ate dinner, and where that tall grass grew. The only place I ever observed it on Mud Lake was at that place, and it has long since ceased to be there.

Mr. PECORE. The spot he is pointing to is in the northeast quarter of section 4, T. 27 S., R. 30 E., south of the lake.

SPECIAL MASTER. The Doctor identifies that as a point (R. 1614) on a straight line from what other point? On a straight line two miles from the Narrows? He doesn't identify the place except by distance? (R. 1615.)

A. I can't identify it, and it is a guess as to it being two miles; that is simply a guess.

It was about two miles from the Narrows, in a direction a little south of west. I was trying to get to the channel. The water runs from Mud Lake into Harney Lake, and that was what I was heading for, and I was aiming to go as straight as I could, but I did not get there, however, and so I might have been off the line.

What I started to tell you, before we left this island, in looking into the water, I saw black-looking brush, and I stopped the boat. It seemed to be such a permanent looking brush, I was surprised, and I stopped the boat and called the young man's attention to it, and we measured the water, and we pulled some of the stuff loose, and it proved to be sagebrush, not greasewood; it was sagebrush.

The water was about three feet or three feet and a half deep where we were. None of the brush stuck out of the top of the water; some of it was very close to the top, and some of it was broken off on stubs like this. I had recently been at the Cascades, where I rowed the same boat over the top of very tall trees in that lake, and when (R. 1615) I saw this stuff, while it was only brush, I thought of having been on that clear lake and having rowed over the tops of those tall trees, and we stopped and looked at this stuff and identified it.

I have been in there since Mud Lake has gone dry, but I did not see the dead sagebrush in there at that particular spot. I was there a couple of times this summer, and I was there last summer, and I found good crops of sagebrush growing; new sagebrush (R. 1616) alive. Of course, if there had been water, I could have ridden over it; and it is now green, and a new crop of sagebrush.

Mr. BLACKMAR. Did you see some dead stubble at the time?

A. Yes, sir; I have both in Mud Lake, and I have in other places; I have seen stubs without tops on them. Sometimes when I examined them, they were loose and could have floated, and I was sure that they had grown there, but I never was so positive that a crop grew right there; it was standing right up, and so I knew it to have grown there at some prior time; and it was the first idea that I had that that was not a permanent body of water, and that it fluctuated up and down, and it was dry at times; and now I have lived to see it in the same condition that it was once before. It has taken several years of dry seasons to have allowed that sagebrush to grow to the size it did in that locality. (R. 1616.)

3. Elevations

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The lowest contour in Mud Lake is at an elevation of 4,088 feet. Considering this as Mud Lake, down to this point near the center of section 32, the highest elevation is a little bump that rises up to 4,095 feet within the meander lines. (R. 114.)

4. Banks

a. With reference to Neal meander line of 1895

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The bank around the north side of Mud Lake is quite steep; the meander line follows quite closely to the base of that bank; it may be in places that it goes up above 4,095 feet there, because there is a ridge right behind the meander line that attains an elevation of

about 4,100 feet, and it is possible that the meander line runs up the side of that bank above 4,095 feet, but if it does, it goes right down to the lower elevation again. (R. 114.)

I think Neal does a pretty good job of following the banks along Mud Lake. He has a well-defined bank along the north side of the Narrows over into section 28, and he follows it very closely.

From there over to the west boundary of the township the bank is not so well defined but there is a pretty perceptible slope along or near his meander line and he does a pretty good job of following it. Along the south side of the lake he follows from the Narrows around to the west end of the line between lots 1 and 2, section 32, T. 26 S., R. 30 E., south of the lake, a pretty well-defined bank, which he follows fairly close.

From there on, he follows the bank fairly well down to the south boundary of lot 3, section 32, T. 26 S., R. 30 E., south of the lake.

From that point for the next mile by his meanders he (R. 115) does not follow the bank, but it might be said that this area is wind-blown sand, being one of the few places to me that has the indication of a considerable change of topography by reason of wind storms in recent years (R. 116).

There may have been a bank along the meander line from the west boundary of lots 6 and 7, section 32, T. 26 S., R. 30 E., south of the lake, at the time Neal made his survey, but if there was one there it has blown away.

Between townships 26 and 27 S., R. 30 E., he follows the bank for a matter of a little more than a half mile, then departs from it, then there is no well-defined bank either along or close to the Neal meander line from that point down to the Gap in the Sand Reef; which is indicated on this map (Plaintiff's Exhibit No. 4) just at the northwest corner of section 18, T. 27 S., R. 30 E., south of the lake.

From the Sand Gap southerly he followed the west boundary of the Sand Reef, and follows very closely to the base of the Reef. (R. 116.)

b. With reference to the meander line of 1877

Mr. CHESTER W. PECORE, called as witness for the plaintiff, testified in substance as follows:

The 1877 meander line was not extended around Mud Lake. (R. 114.) Perkins surveyed T. 26 S., R. 30, and T. 26 S., R. 31 E., north of the lake in 1879 and did not meander Harney or Mud Lakes in either of those townships, nor Malheur Lake as shown on Plaintiff's Exhibit No. 3. He ran a meander line along the south in the same year and not along the north, but why he did so I do not know. There was no meander line run prior to the Neal meander line and the line of 1912 along those two townships north of the lake. (R. 114–115.)

c. In the early days

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Has Mud Lake any banks to it?

A. Well, yes, there are banks; when the water is up there are banks; especially on the east side there is a high ridge that runs down there, and it has greasewood and salt grass on it. There is a high bank there, and when the water is up it is easy to land a boat and when the water recedes you have to drag the boat through the mud before you can get out. (R. 1048.)

Mr. RICHARD A. SMITH, called as a witness for the plaintiff, testified in substance as follows:

On the east side of Mud Lake it has a bank there. There is a kind of a sand reef, or something that has been blown up there; on the other side, the water would gradually move out as it lowered. (R. 1302.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

I have been around practically the entire shore line of Mud Lake. I have never seen anything that would indicate to me a shore line around Mud Lake until I saw (Reservation) posts up there for Harney and Malheur Lakes. (R. 1602.)

b. Description in general

a. In the early days

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, testified in substance as follows:

I once said I knew where Mud Lake was; but I knew nothing of Mud Lake in the early days, because we called everything east of Harney Lake Malheur Lake in those days. (R. 734.)

Cross-examination:

In the early days I did not know a place called Mud Lake. There may have been other people that knew it but I personally did not know it. (R. 742.)

Mr. LOUIS WOLDENBURG, called as a witness for the plaintiff, testified in substance as follows:

I never knew of any Mud Lake while I was in the country (in the early days); when I was in there it was all Harney and Malheur Lake. (R. 752.)

b. 1880–1890

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

I do not know anything about Mud Lake. There was no Mud Lake when we were down there. It was all Malheur Lake from the Sand Reef clear east. (R. 149.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I own 1,015 acres of land around Mud Lake, but I can not state the length of the lake front of my property (R. 833); the property lies on the south side of Mud Lake and on the west side; it is all patented land.

Mr. LILJEQVIST. Q. Where did your water come in the normal springtime around the northerly edge of your patented lands on the lake?

A. It comes through the Narrows bridge there from the Blitzen, (River) and it might come from the Silvies (River); I don't know; but it comes from the Blitzen (River) even though there is no water coming through.

There is not so much water in the last 15 years as there was in the early days.

Mr. LILJEQVIST. Q. In the normal springtime did the water back up in Mud Lake up to your patented line?

A. Yes; it backed up in there a good deal. (R. 834.)

c. 1890–1900.

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

Mr. BLACKMAR. Q. Mr. Elliott, down around Mud Lake, did you ever see any evidence of an old channel which had been filled up?

A. There is a channel there.

Q. I am not referring to the one where the water goes through, but I am referring to an old channel which may or may not be filled up?

A. I don't know just how to answer that question. There are several channels around there, right on the south of the lake. South of the lake when the water gets extremely high it runs in through the Narrows and runs out and spreads over that country, and then it goes into an old channel and goes into Harney Lake. (R. 1067.)

Mr. W. A. CAMPBELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been over that country to the northwest of Mud Lake a good many times. I do not remember of a lot of settlers moving

in there in the old days. There were people up in there northwest of Mud Lake in that country, but whatever became of them is more than I can tell you.

There was good land all over this valley in places; it is very spotty.

I have not been there where the settlers moved out for a long, long time. (R. 2247.)

d. 1900–1931

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I know an area there to the northwest of Mud Lake (R. 2228); they call it the sand hills.

Mr. LILJEQVIST. Q. Wasn't that an area of good land in there in the earlier days, or was that before your time?

A. That was before my time.

Q. In your time there wasn't anything but sand?

A. Sand; it might have been good enough land if they had any water for it, but there was no water there.

It was all taken up at one time where I lived there, but they all starved out and left. They could not raise anything, and left. I do not think the shifting sands bothered them. (R. 2229.)

6. Sand Conditions

a. 1920–1931

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been down there (Mud Lake) in recent years, for about six or seven years.

The dust and sand blew down there in the days I was there.

Mr. LILJEQVIST. Q. Now, if this thing has been dry for eight or nine years, from your observation of the country, with the amount of sand and dust that blows there, would it probably alter the situation in that country?

A. Yes, it certainly would.

Q. Do you know to what extent the sand would blow down in there over the flats?

A. No, I don't, but——

Q. Have you seen evidence that looks like snow drifts on the sand?

A. Down on the other side of the Reef, on the side next to Harney Lake.

There was no drifts there on the north and south part of Mud Lake. (R. 2228.)

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Between the meander line south of sections 32 and 33, T. 26 S., R. 31 E., north of Mud Lake, and in the meander line of section 32 and part of section 33, T. 26 S., R. 30 E., south of the lake, there are a few hundred acres that show every indication of having moved and changed a great deal by virtue of the wind having blown the sand there. (R. 2270.)

G. HARNEY LAKE

EVIDENCE RELATING TO

1. Vegetation

a. 1880–1890

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, testified in substance as follows:

There was not much vegetation in the early days around the immediate edges of Harney Lake. (R. 951.)

b. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

Within three or four days after viewing Mud Lake in April, 1931 (R. 116), we observed Harney Lake.

There is no vegetation on Harney Lake except along the bank and for a distance not to exceed in any place perhaps 200 yards out from the banks, from the Sand Gap southerly until we get over to about the line between sections 14 and 23, township 27 S., R. 29 E.

From sections 14 and 23, T. 27 S., R. 29 E., to about the east boundary of section 36, T. 26 S., R. 29 E., a fair growth of the vegetation in that area extends out for perhaps half or three-quarters of a mile from the meander line.

From the east boundary of section 36, T. 26 S., R. 29 E., there is practically no vegetation at all between the bank and the lake bed until we get way back to the Sand Reef where we began.

In sections 1 and 2, T. 28 S., R. 29¾ E., and sections 35 and 36 of T. 27 S., R. 29½ E., there is sort of a ridge thrown up of trap rock across this sort of a bay shown on the map (Plaintiff's Exhibit No. 4), as extending down to sections 1 and 2, T. 28 S., R. 29¾ E., with greasewood on the top of that ridge through there. (R. 117.)

That is a good deal more than 200 yards from the bank.

The vast majority of Harney Lake is nothing but a great barren alkali flat; it is practically as level as a floor, with no vegetation on it at all. (R. 118.)

c. Hay 1880–1931

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

I do not know of any hay that was cut down on Harney Lake unless it was on the west side. I never watered any stock in the lake. I never was there in the winter time. (R. 146.)

d. Dead sagebrush and greasewood

Mrs. EMMA MILLER, called as a witness for the plaintiff, testified in substance as follows:

Last June, 1931, I walked out every day about two or two and a half miles to the lake bed of Harney Lake. (R. 639.) While there I observed dead greasewood and sagebrush stumps about a mile out into the lake; it might have been a little farther or not quite that far. I know sagebrush when I see it. I used to have to haul it myself and chop it and burn it. I ought to know what it is. The sagebrush and greasewood that I saw was dead. (R. 639–640.)

2. Banks

a. With reference to Neal Meander Line of 1895

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

From sections 14 and 23, T. 27 S., R. 29 E., to about the east boundary of section 36, T. 26 S., R. 29 E., Harney Lake does not have a bank anywhere near the meander line; it is just a very gradual sloping country; there is a gradual slope toward the lake but not a well-defined bank near the meander line.

From the east boundary of section 36, T. 26 S., R. 29 E., there is a bank again. (R. 117.)

The vast majority of Harney Lake is nothing but a great barren alkali flat; it is practically as level as a floor, with no vegetation on it at all. (R. 118.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

From the time I have known Harney Lake, the edge of it has been well defined. Harney Lake has a real rim. I do not know anything about the surveys that were run prior to the Neal survey. I think the Neal survey was run more to conduct a settlement at that time.

Mr. LILJEQVIST. Q. Do you know how close that line runs to the border of (R. 1391) the lake at ordinary high water, on Harney Lake?

A. Well, that is so indefinite in my mind that I would think the records would be more definite upon that. (R. 1392.)

b. With reference to trap rock

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

In sections 1 and 2, T. 28. S., R 29¾ E., and sections 35 and 36 T. 27 S., R. 29½ E., there is a sort of ridge thrown up a trap rock across this sort of a bay shown on the map (Plaintiff's Exhibit No. 4) as extending down to sections 1 and 2, T. 28 S., R. 29¾ E., with greasewood on top of that ridge through there. (R. 117.)

The term "trap rock" is not used in a technical sense by me. It is of a lava formation, in small particles, averaging two to four inches in diameter and one quarter of an inch thick. I do not know the scientific name for it.

In my opinion, that trap rock was thrown up there by the waters of Harney Lake and that it came somewhere from the western shore of Harney Lake because the winds in this country are notoriously from the west. The rock, therefore, was unquestionably put in there by wave action. I do not know where else it could come from.

That trap rock extends more than across that little bay; it extends westerly probably over to the end of section 33, T. 27 S., R. 29½ E., but I hesitate to say just where it stops. (R. 120.)

c. In the early days

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, testified in substance as follows:

The bank around Harney Lake slopes, but I don't know how far. It was down to the edge of the water at the time I was there. (R. 236.) I do not know whether there is a bank on the west side of Harney Lake. There are sand knolls around there. I would call it level. (R. 237.)

Mrs. EMMA MILLER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The place where I lived from 1889 to 1908 right by Harney Lake is now known as the Sizemore place.

(NOTE.—The Sizemore place is situated in the middle of the south boundary of the SW. ¼ of section 10, T. 27 S., R. 29 E.—Pecore. R. 643.)

The place was situated kind of southwest of Harney Lake. There was no bank there. (R. 643.) It just looked like it was perfectly level, and it looks that way yet; but it is deeper as you go out (toward the center of the lake); there was no bank.

I don't know anything about the meander line. I cannot tell you where the water stood with reference to it. (R. 644.)

d. 1880–1920

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

On the north side of the Sand Reef, until you hit the tules, I did not see any bank; it was a salt-grass soil. Where the tules are, I have never seen any bank (R. 144); the water was there, but not what you would call a bank. (R. 145.)

e. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

There is a very sharp well defined bank around the (R. 118) south edge of Harney Lake, and the base of that bank where it really starts up steep, begins at about 4,090 feet for a long distance.

At the west end, the real steep part begins at about 4,095, that is, in sections 23 and 24 and 25, T. 27 S., R. 29 E.; that bank extends up to an elevation of 4,125 feet in a distance of less than 200 yards.

R. S. Moore who sub-divided Tps. 27 and 28 S., R. 29½ E., and T. 28 S., R. 29¾ E., in 1922 ran his meander line along the top of that bank, which is very steep; he followed it along at the top and does not depart from the top of that cut more than a couple of hundred feet at any place, except at the west end where he does not get quite to the top of the bank.

The maximum elevation is 4,125 feet. His meander line is about 4,113 feet. He is ten feet below the very top of the bank at the west end which is about the highest point he reaches, and it is awfully hard to estimate an average elevation of his meander line along there, but that bank will average at least ten or fifteen feet high, and he follows along the top of it. (R. 119.)

3. Water conditions

a. In the early days

Mr. FRANK WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In one particular instance I crossed the Sand Reef with a bunch of cattle before the Narrows bridge was built. It was early in the spring. I had a packhorse and there were two or three men with me; we were going to camp on the Sand Reef that night; I took a coffee pot and rode out from the Sand Reef two or three hundred feet onto Harney thinking the water was good; the depth was gradual being from nothing to about mid-sides of a horse out about 200 feet, and then it dropped off to the west; I got a coffee pot of water, came back to the camp, tasted it and told the boys to pick up and go on

as I did not want to camp there. I did not try the water on the Malheur Lake side of the Sand Reef because it was full of tules and marshy and is not as good to drink as it would be in an open body of water. (R. 202.)

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, testified in substance as follows:

Since 1877 I have been around Harney Lake two or three times a year. I was never around Malheur Lake at all and I know nothing about it.

I have seen Harney Lake when there was very little water in it prior to 1890, although I could not tell how deep it was. There was lots of water there. It might have been two feet deep or not over six inches. I never was out in the water (R. 235). The lake was not the same size every year; it was for a long time, but the water has been failing for years; of late years the size of the lake changed. In the early days I do not know that it did. (R. 236.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

I have been around Harney Lake quite a good many times, but I have only seen it since it has been dry; that is in recent years. I saw it at that time I spoke of when there was plenty of water and it had a fine beach all the way around it. The occasion of going there was to bathe. When I went into Mud Lake, I would get into an itch weed, and I had to go to Harney Lake to get cured; that was the only thing that would cure it. (R. 634.)

Cross-examination:

Mr. LILJEQVIST. Q. You finally discovered a use for Harney Lake? A. Yes, sir. (R. 635.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, testified in substance as follows:

I have worked with cattle around Harney Lake, and I think that Harney Lake is a deeper lake than Malheur Lake. (R. 733.) I never did have cattle get out in Harney Lake. (R. 734.)

b. 1880–1890

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I think the waters of Harney Lake were about an eighth of a mile from the Sand Reef the day before it broke through the Reef (in 1881), but I don't remember exactly. The waters of Harney Lake were considerably lower than the waters of Malheur Lake. (R. 160.)

Mr. FRANK WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The burning of the tules by the settlers in 1889 allowed a lot of water to go down and flow into Harney Lake. (R. 203.)

Mrs. EMMA MILLER, called as a witness for the plaintiff, testified in substance as follows:

I lived on the shores of Harney Lake from 1889 to 1908. (R. 639.) on Plaintiff's Exhibit No. 4.—Pecore, R. 643.)

(NOTE.—The Sizemore place is about the middle of the south boundary of the SW. ¼ of section 10, T. 27 S., R. 29 E., and is indicated as the Sizemore Ranch in that section, township and range on Plaintiff's Exhibit No. 4.—Pecore, R. 643.)

I was down there this last June, 1931. I walked down there out in the old lake bed every day, where the lake used to be; where I used to go down and hunt arrow points, and water was all over it. There was no water in Harney Lake at all. It is plumb dry.

I walked out to the lake bed about two or two and a half miles. (R. 639.)

When I was first out there at Harney Lake (1889 to 1908) the water of Harney Lake remained practically the same for the first three or four years (1889–1893 or 1894). After that it began to recede a little. There was one year—I believe it was 1897 or 1898, I do not know which—that the water was a great deal higher than it had ever been before, or since. It came up pretty near to the haystacks; very close to them. (R. 640.)

Mr. BLACKMAR. Q. When you were there the first time did you ever observe the depth of this lake? (R. 640.)

A. Oh, you couldn't tell anything about it. It was just like the floor. Just kind of level, and just receded a little. It was level, and got a little deeper and deeper.

My children and I have waded out in the (Harney) lake, a distance of about twice the length of this room (about 100 feet), and we could see arrow points out in the water, we would wade out and get them. My children were pretty small at that time. They were about five, six, and seven, along there. Myself and children would wade out into the lake and it was great for them to hunt arrow points, but I wouldn't let them go alone, so I used to go with them in the afternoons. Those little fellows could wade out quite a ways. R. 641.)

Cross-examination:

What I have testified to occurred on the south side of Harney Lake. I went there in 1889. That was a dry year.

The water of Harney Lake that year of 1889 was not out quite as far on the beach as it was the following years. That was the lowest I have ever seen it, until about two years before I sold out

and left there and then it began to recede again. I sold out in 1908. It began to get lower in 1908 again. (R. 642.)

The years that the water stood in Harney Lake at practically the same place were just about normal weather conditions in the country. The lake receded after that because of the dry years. We got less snow in the mountains, and we didn't have the water to fill it up. When the heavy snows came then it filled it up.

The OO Ranch used the water of Silver Creek for irrigation. That was on the other side from us. I do not know when they commenced doing that, but they used that water when I was there. They always turned that water out on their meadows in the spring. (R. 644.)

I can not tell you where the waters of Harney Lake were with reference to the meander line, but I think my boy understands it. (R. 645.)

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, testified in substance as follows:

Between 1884 and 1887 I saw the west side of Harney Lake a number of times at different seasons of the year. The level of the water changed.

Mr. BLACKMAR. Q. Would you say that it changed from season to season and from year to year?

A. Yes, sir. I know that I never saw it two years the same.

I remember Silver Creek that runs into Harney Lake. When I was there from 1884 to 1887 there was water in the mouth of the creek, but it was caused, I think, from the warm springs which are about six or seven miles above the mouth of the creek. Above those springs Silver Creek would be dry from time to time. (R. 950.) In the spring of the year we got a pretty good head of water in Silver Creek, and the length of time it would last depended upon the snowfall; with the deeper depth of snow it would last longer. I have seen it run for a month or six weeks when the snow would be deep. In those days sometimes the creek got so high we had to swim it. I have seen it all ways.

Over on the other side of Harney Lake is a creek called Jackass Creek. I have been on that. From 1884 to 1887 that stream did not run throughout the year, it would dry up in the summertime. In the spring of the year when the snow run-off was coming, there would be a big head of water in Jackass Creek. (R. 951.)

The water of Harney Lake is very alkaline. (R. 951.)

Cross-examination:

Mr. LILJEQVIST. Q. You are not testifying that the water in Harney Lake, when the spring floods were over, whether it came up to the Narrows or not?

A. I have seen it past the patented land; that is, on Harney Lake on the west side. (R. 957.)

It was there for a number of years after I got back in 1898. (R. 958.)

Redirect examination:

Some of the water that got on the patented lands over there on Harney Lake came out of Silver Creek, and some of it was from the backing up of the water of the lake over the edge of the patented lands.

When the water backed up from Harney Lake on the vegetation it killed all of it up there. Then after the water receded that vegetation (R. 958) would not come back again until it was flooded again by Silver Creek or Warm Springs principally. In other words, it would have to get some new (fresh) water to neutralize the alkali and wash it off. The flood water of Harney Lake remained up there at one time for two years or better, but I do not remember the years, although it was along about 1900. (R. 959.)

Mr. CLAUDE MCGEE, called as a witness for the plaintiff, testified in substance as follows:

I was at Harney Lake in June, 1888. We went there more for sightseeing and hunting a little; there were four in the party, I believe. We crossed over the Sand Reef. (R. 2008.)

As I saw Harney Lake in June, 1888 (R. 2008), it was quite a big body of water; we got there in the evening, and the wind was blowing very strong from the west, and we went over to the Reef and took a look at the lake, and the waves were rolling very high from the south. And we went back, and the dust and sand were flying, and we stayed in camp the rest of the evening; and the next morning the sand had ceased blowing, and we went back to the Reef, and the water went back about 300 feet and had left a lot of dead fish out on the sand.

The water at that time came right up to the Sand Reef at times; the waves would come and go, washing up against it. (R. 2009.)

Cross-examination:

I saw Harney Lake a few times.

Mr. LILJEQVIST. Q. I understood you to say here that you saw the water go back from the edge at Harney Lake about 100 feet, and stay there for a great many years?

A. Yes.

I said the water went and came at that time we were there, the wind was blowing, and the water came back to the Reef. The next morning I think the water was about 300 feet away from the Reef. (R. 2012.)

There was a great deal of sand down there in those days. (R. 2013.)

In the evening when we got there (at the Sand Reef) it (the water) came up to the Reef, and in the morning it was back about 300 feet. I did not see it later there at that place.

Mr. LILJEQVIST. Q. Did you see it on the lake around there for many years after that?

A. Well, once in a while; not very often.

I have been on the west end (of Harney Lake) since that (time), and also at the southeast, on the roads.

Mr. LILJEQVIST. Q. I don't know what you mean by this. I am trying to see if there is something you forget. Maybe this is an incorrect answer. You were asked with reference to Harney Lake (when you gave your statement to counsel for the Government):

"Would it usually recede away in the summer months?

"A. A little bit.

"Q. How far?

"A. For years and years it never got over 100 feet.

"Q. Would you designate those years?

"A. From '88 for about a period of ten years, and since (R. 2013) that time it has been dried up every year.

"Q. That ten years' period immediately following '88 was the highest water cycle of years you have known down there?

"A. Yes, between that time, '88 and '98."

What were you referring to there, or was this misunderstood possibly?

A. It must have been, because I don't think I was there for several years after the first time I was there. (R. 2014.)

I did not own any land on the (Harney) lake, or around the rim of the lake. (R. 2014.)

c. 1890–1900

Mr. GUY L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

On one occasion probably in 1897 or 1898, I was there at the cut in the Sand Reef when Harney Lake was backed up to almost on a level with the water above (east of the Sand Reef). There was a very little current to the water (through the Gap). (R. 1338.)

Mr. GEORGE H. BOLLENBAUGH, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In those days I saw the water of Harney Lake on the east side of the Sand Reef, by the Sand Reef. I saw it there for two or three different years pretty high. (R. 1408.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

I have been around Harney Lake very much. I saw it the first year I came here (in 1899). Harney Lake has always been a strong alkali lake. We tried to use it for camping water, but it was too strong, and we couldn't drink it. Later when the water was not so high I was told by stockmen that the stock avoided it and would not drink it. (R. 1617.)

Cross-examination:

I never visited Harney Lake when there was as much water as there was that season (of June 1899). (R. 1629.)

d. 1910–1920

Mr. FRANCIS W. TRISKA, called as a witness for the plaintiff, testified in substance as follows:

During the three years that I was there (as warden of the Lake Malheur Bird Reserve), I would say there was not very much water in Harney Lake. (R. 2200.)

e. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The only water in the (Harney) lake, the first time I saw it (in April, 1931), was a small area over in the west end, opposite about sections 2, 11, and 14, T. 27 S., R. 29 E., covering an area of about 2,000 acres. There are about three sections of land covered with water, and we later discovered that the water was about an inch or two inches deep.

I have never tasted the water in Harney Lake. I have taken the word of the natives that it is not fit to drink. (R. 118.)

There never has been any water at all in Harney Lake east of the Sand Reef since I have been here. There are two or three very small insignificant springs over east of the Sand Reef, but the water in Harney Lake gradually dried up in the latter part of June or July, until there was practically no water there at all. In the last six weeks water has been flowing into Harney Lake from the springs at the OO Ranch about five miles west of the west end of Harney Lake, but the water from those springs during the summer was impounded to flood over hay fields. There was perhaps two thousand acres of water surface in Harney Lake the last time I was there, about ten days or two weeks ago.

During the summertime when we were making the surveys, we drove our truck across the lake in a half a dozen different places without any difficulty at all. (R. 121.)

f. Ice conditions

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I have seen Harney Lake frozen over; sometimes the ice is thicker than at other times. In the streams I have seen it as thick as twenty-one inches.

Mr. BLACKMAR. Q. Over on Harney Lake, at the time of the spring break up, have you ever seen cakes of ice washed up on the sand?

A. No; I have not. I have not been over there at that time, but I have heard fellows mention that. (R. 514.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

I have never seen ice washing there from Harney Lake against the Sand Reef, but I have seen it pushed up. I have visited there when great cakes of ice were pushed up. I would say they would be twenty inches in thickness. Cakes of ice twenty inches thick, with dimensions larger than this table, five by three feet, and larger than that. They were pushed up above the water line, and up against these dunes, enough to make me have the belief that the ice helped build those dunes, as well as the wind blowing sand up there. I got that impression from seeing the ice, and also from seeing greasewood clumps pushed out of their position by this ice, and the ice pushing the dunes back. (R. 1619.) I mean that as this ice came in it pushed the sand ahead of it. The wind broke up ice from the southwest and the northwest, so that the traveling winds came across that bit of water, and when the breakup would come, the drift was all that way [indicating], and the ice was all out in the lake, and pushing against this at the edge gave enough force to shove it up, and shove it up, as it was being drifted by the wind, and I always held the theory that it played a big part in the building of those dunes. (R. 1620.)

g. Depths in the early days

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

I rode out into Harney Lake 200 or 300 feet and found the depth of the water gradual from nothing to mid-sides of a horse. (R. 202.)

Mr. GEORGE H. BOLLENBAUGH, called as a witness for the plaintiff, testified in substance as follows:

The time I rowed in a homemade boat on Harney Lake, about three-quarters of a mile out in the lake, from down the channel to one of the big spring branches, we probably go in about two and a half feet of water. (R. 1404.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. What do you say about the depth of Harney Lake as you saw it there during the different seasons and different years?

A. I was quite interested in that. Before I got down to it, I was told I had better not put that little boat out on it; that it was a very deep lake. I wasn't only told it was deep, but I was told they hadn't been able to find bottom to it, and perhaps there was a whirlpool, and that the water escaped; some people at that time who hadn't seen it dry thought there was an escape somewhere of the water, and I listened to all that, and I wasn't a very good navigator, and I was somewhat fearful when I put my boat on it; and the wind blew, and

the waves were high, and I didn't get far out into it that first season, in the belief that it was deep, and that there may have been a sucking (R. 1620) place out in it, and I didn't want to go down, but as I watched it year after year, and saw it receding and receding, I soon became convinced there was no outlet to it, and that it was not very deep. It got more brackish, and less suitable for drinking purposes, though there continued to be a little fish life in it.

Q. Now, going back to its depth. You said it was not very deep. Can you reduce that to inches or feet?

A. Only an estimate. I would say that 2½ feet reduction in the level of the lake divided it in half, and when it lowered 2½ feet, there wasn't more than half of the original lake covered; and that 2½ feet more practically made it a dry lake. It is not dry now—quite. It would appear to be. There are some little low places, and some warm springs in there, so that it is not quite dry, and never has been. (R. 1621.)

4. Elevations

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The lowest elevation of Harney Lake is 4,079.7 feet, practically in the very center of the lake bed. (R. 118.)

5. Sand conditions

a. 1931. Rodolf and Ganong Survey, 1912

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

In 1912, Rodolf and Ganong, deputy surveyors, U. S. General Land Office, surveyed a portion of T. 26 S., R. 30 E., south of that portion of the township which had been surveyed by Perkins in 1879; they extended the surveys down to Harney Lake, and meandered the lake. Mr. Ganong is now the office engineer of the General Land Office in Portland, in charge of records under the supervision of the district cadastral engineer.

Those surveys of Ganong and Rodolf were monumented with iron posts. Section posts are monumented with two-inch posts, that is an iron pipe two inches in diameter, flanged at the bottom, filled with concrete with a brass or bronze cap riveted to the top of it; the post is thirty-six inches long and at that time they were set twenty-four inches into the ground. The meander corners are supposed to be monumented by one-inch posts under the General Land Office manual of instructions; but every one of these meander corners were monumented with two-inch posts. Those posts are reported to have been set by Rodolf and Ganong twenty-four inches in the ground. They are set out at about eight chains (R. 123), or 450 feet, south and west of the Sand Reef from the western end of the Sand Reef over to the southwestern corner of T. 26 S., R. 30 E. (R. 124.)

When we found the meander corners of sections 35 and 36 in June, it was exposed all but four or five inches. There was not a hole blown in the sand around that post. The surface of the ground had been sheared off by the wind. The surface was level around the post; there was no hole around the post; six inches of the post extended into the ground, which was level over a large area surrounding it.

The meander corner of sections 34 and 35 and the meander corners of sections 27 and 34, and 27 and 28, were fairly blown out of the ground; the ground had been sheared off by the wind and the posts were lying on the ground; there was no hole. We identified the position where the base of the posts had been and we reset them when we found them lying on the surface of the ground.

The corner of sections 26, 27, 34, and 35 were set by Rodolf and Ganong and monumented by an iron post at the same time. We wanted to find that to check the position in which we found this meander corner lying on the ground. We chained up there from the meander corner and back to where we found the corner of sections 27 and 34, and had our position of that corner (R. 124) within four or five feet; the point of that section corner at that time was on an area of sand that had been blown in there, probably not less than six feet deep. (R. 125.)

We dug around and dug a hole in that sand until we got down to the firm soil underneath. The hole was twelve feet in diameter at the top and six or seven feet at the bottom. It took one man a day to dig it to try and find that corner, but we did not find it.

Within a week of that time we came back over the same place, and there was no indication of any hole ever having been dug there at all, it having been filled up again with blow sand. That indicates to me that the Sand Reef is being built up right at this time by sand off of Harney Lake. That is the way I think it was originated, and it is still building. (R. 125.)

Cross-examination:

The posts that Rodolf and Ganong set were thirty-six inches in length, and they were placed there in 1912. The wind itself has not cut away thirty-six inches of sand immediately below the Sand Reef since 1912. Those posts were set twenty-four inches in the ground. (R. 2270.) The wind did not blow away twenty-four inches of sand around their base, it was good firm soil they were set in. (R. 2271.)

6. Wind conditions

a, 1931. In general

Mr. CHESTER W. PECORE, recalled as a witness for the plaintiff, testified in substance as follows:

Every time there was even a moderate wind around Harney Lake, there would be a white cloud of alkali dust intermingled with sand

that boils out of that lake bed area; and many times was so thick it interfered with our surveying to a great extent; we could not see through it at all; on a real windy day, you could see the dust boiling out of Harney Lake for a distance of five or six miles at least. (R. 134.)

b. In the early days

Mr. CLAUDE MCGEE, called as a witness for the plaintiff, testified in substance as follows:

In June, 1888 (R. 2008), when I saw Harney Lake the wind was blowing very strong from the west; we went over to the Reef and took a look at the lake; the waves were rolling very high from the south; we went back, and dust and sand were flying; we stayed in camp the rest of the evening; next morning the sand had ceased blowing; we went back to the Reef; the water went back about 300 feet, and left a lot of dead fish out on the sand. (R. 2009.)

Cross-examination:

The evening we got down there the wind was blowing to beat the band. (R. 2013.)

7. Meander lines

a. In general

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on re-cross examination testified in substance as follows:

In the vicinity of section 28, T. 26 S., R. 30 E., Rodolf and Ganong ran a survey in 1912. (R. 2288.)

Whether that survey was run at the mean high-water mark would depend upon the height of the water in the lake at that time. I have examined Mr. Ganong's field notes and I do not believe he mentions the exact position of the margin of the body of water, but if the water was up to an elevation of about 4,094 feet, his meander line would certainly have been no good delineation of the boundary because he jumped across the Sand Reef here and obtained an elevation of practically 4,140 feet in crossing that Sand Reef. You will note on this map he jumps from an elevation of 4,085 feet practically up to 4,140 feet, and then back again to 4,094 feet. As to that particular meander line I am not so sure that it is properly surveyed across there.

The meander line was not too far from the water around the south side of Harney Lake. The meander line of Harney Lake, with the exception of the point I have just mentioned across the Sand Reef, is pretty well run. Whether the meander line around Harney Lake is to be determined as complete depends upon what is to be designated as the east margin of Harney Lake. (R. 2289.) If the Sand Reef from the south boundary of section 36, T. 26 S., R. 30 E., north of the lake, to section 18, T. 27 S., R. 30 E., south of the lake is to be

considered as the east margin of Harney Lake, the meanders are not complete; but if you do not consider that Sand Reef as the boundary of Harney Lake, there is a complete meander extending clear around the rim of the lake. (R. 2290.)

8. Development, resources, value

a. Agricultural value

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on re-cross-examination testified in substance as follows:

The area in Harney Lake certainly does not have much value from an agricultural viewpoint. (R. 2291.)

9. Silver Creek

a. Water conditions

aa. In the early days

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with Silver Creek, and it used to run every year, but for the last two years it has never gone over twelve miles down the valley; it might have got into the Warm Springs Valley, but this year it didn't get there. The head of Silver Creek is in the Snow Mountains. We got lots of water in the early days. There wasn't anything in Silver Creek Valley when I went there; we never had any stock there. They all went to Warm Springs Valley. (R. 237.)

bb. 1870–1931

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

In July, 1873, on my way to Harney Valley (R. 1774) I camped on Silver Creek. At that time the water was only in pools on the lower Silver Creek. The troops had no trouble at all in crossing Silver Creek. (R. 1775.)

10. Fish, fur-bearing animals, fowl, birds

a. In the early days

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I saw dead fish lying along Harney Lake there; I do not know what year it was, but they were lying on the east side, and on the south side of the lake; there were hundreds of them; could not estimate them. It was just a pile of fish washed out there, it might

have been (R. 1117) from 5 to 20 feet wide, I don't know, and I did not observe how high they were piled up; they were piled up and washed out, but not piled in piles, but just lying there, like a lot of driftwood. I could not estimate how many there were; they may have been a foot deep and more in places. I suppose the fish came out of Harney Lake. I don't know whether they could live in that lake or not in those days, but they came out of there beyond all doubt because I saw them there on the edge of Harney Lake (R. 1118); they had been washed out quite a little bit from the water. I have formed no idea as to what killed them: I don't know where they lived. I have never had any judgment on it. (R. 1119.)

Recalled for further cross-examination:

The fish that I have just testified about were from 6 to 10 inches long, I should judge; they were white looking fish; I do not know that I have ever seen one like them in Malheur Lake but I have caught similar fish out of the Blitzen River. (R.1247.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. There has been some testimony in this case about some fish down there in Harney Lake. Do you know a fish that is called a chub?

A. Yes, sir.

I have not seen what I identify as a chub around there in Harney Lake. There was a very great deal of fish, little fish have always been in that lake, and the birds use them (R. 1621) as food. On account of the color of the lake, you can not look into it more than a few inches at the very best, and I never saw any of these fish until I heard it in the testimony that they had been washed ashore. I have never observed any of those fish, but there is a fish life and that was very valuable to the birds but it was a smaller fish than this (chub). (R. 1622.)

H. SAND REEF, SAND GAP

EVIDENCE RELATING TO

1. Elevations

a. Sand Reef

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The Sand Reef rises from an elevation at the base of it along the west of about 4,090 feet to a maximum elevation of 4,156 feet, the highest point we found on it; that is just a dune on top and located in lots 3 and 4, section 36, T. 26 S., R. 30 E., north of the lake. The lowest point of the Sand Reef except in the Sand Gap is 4,100 feet. (R. 121–122.)

b. The Sand Gap

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

The minimum elevation in the Sand Gap eight chains, or about 528 feet (R. 126) east of the east edge of the Sand Reef is 4,083 feet; the very middle of the Sand Reef, in the gap, the elevation is 4,085 feet; it has raised two feet going west in that distance; then it drops down to 4,084 feet to a little hill about the west edge of the Gap (R. 125) to where we pick up a little hill that goes back to 4,085 feet; then at a point five chains west of the center of the gap in the Reef we reach an elevation of between 4,086 and 4,087, so that at a point about five chains west of the middle of the Sand Reef, at the gap, the elevation is four feet higher than it is at the point nearly eight chains east of the gap. (R. 126.)

2. Quicksand conditions

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

I found no quicksand around these lakes in the strict sense of the word, although warned about it in the Sand Gap. I have been stuck with a car just at the west end of the Sand Gap two or three times this summer in the loose sand, and I started across but did not get there. There was no water in the Gap. I am familiar with quicksand and have no doubt at all but that the fine sand in the Sand Gap is quicksand when there is water on it. It is now dry (R. 126), and I can not tell whether it is regular quicksand or not. (R. 127.)

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on recross-examination testified in substance as follows:

When we crossed the Sand Reef near Harney Lake with our stock in the early days before the Reef broke through there was no quicksand there of any kind between the Sand Reef and Harney Lake. We never got stuck in there. It was always solid. (R. 169.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

Shortly after the Sand Reef broke through, there was trouble with quicksand in there; several stock were lost in there; the stock would get in there and could not get out. I have not seen the stock there myself, but I have heard of fellows who have. Mr. Dunn and other people took cattle out of there; they pulled them out.

Mr. BLACKMAR. Q. In your crossings through there on horseback, did you ever observe, yourself personally, whether or not it appeared to be quicksand?

A. It is quicksand, I'm pretty sure. (R. 505.)

Mr. EMIL BAKER, called as a witness for the plaintiff, testified in substance as follows:

I have never crossed with stock on the Sand Reef. I have been across there, but not clear across the Sand Reef, since it washed out. You could not get clear across on it. I have crossed with stock above the Sand Reef on the east side. (R. 595.)

Where we crossed with cattle above the Sand Reef would depend upon where we would be gathering the cattle around Harney Lake. We would round the cattle up close to the Sand Reef, and the point to which we would take them would depend upon where we were camped on Harney Lake. If we camped on the south side and happened to come to the north side of the lake to gather cattle, we would take them clear around the lake that way. If we gathered stock on the other side we would cross with them around the other way (above or east of the Sand Reef) if it was nearest to our camp on the north side. The reason we did not cross right at the Sand Reef was because generally in the cut it was miry; that is the way they always figured it out in this cut.

Mr. BLACKMAR. Q. Have you ever been in that channel on a horse so that you could say whether it was or wasn't a quicksand which was in there?

A. No, sir. I never was right down in it. (R. 596.)

While around there, I have seen cattle mired down, but not right in the cut, or Gap, but a couple or three hundred yards away from it toward Malheur Lake side where we would cross; that is where the cattle would sometimes mire down. I have been in there to get cattle out; we put a rope on them and one, two, or three men would help pull them out.

On the east side of the Sand Reef, or the Malheur Lake side, if it is wet at times, it is a little muddy; I don't know that it is sandy there, it is muddy. (R. 597.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, testified in substance as follows:

For several years after the Sand Reef broke through, it was not safe to drive cattle through that channel (the gap in the Sand Reef) because after it got down low, to a certain depth, then it got so there was quicksand there, as it is to-day; if there is water in there, there is quicksand, and a horse will mire down and you cannot drive a horse through there. I have seen horses mired down in there. I saw seven or eight wild horses mire down there at one time. (R. 830.) I have never crossed there myself on horseback, except before the quicksand condition developed. It was not soft there before the channel was cut down so deep, but when it got cut deep, that is when the quicksand developed there. (R. 831.)

Cross-examination.

When I first went down there and saw the Sand Reef there was no quicksand in the bottom of the channel. (R. 832.)

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

I have been at the Sand Reef down there by Harney Lake, and I have seen the cut in it. (R. 1045.) I would not say for sure that there was quicksand there, but I have seen stock mired in there, and the stock was mired with their heads just sticking out, and they could not get out; they were completely covered with the exception of the back and head. It is a kind of a sandy formation in there. (R. 1046.)

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, testified in substance as follows:

I do not know whether I have ever seen any of my cattle down in the cut (or gap); I have seen it, after it broke through, and the water was drying up; the water used to run through there in the spring when the lakes would rise, and the water would go down, and I have seen cattle mired down in that channel. (R. 1096.) On several different occasions along there, quite a little ways from the Reef and by the Reef, where it was drying up, the mud would be stiff. (R. 1097.)

Mr. PAUL WARE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The reason for cutting out the sand which had blown into the Sand Reef was they wanted to start a canal so that they could get it to drain through. They all termed it as quicksand; it did not need but a little work to get it through and open it, which it did. (R. 1328.)

Mr. CLAUDE MCGEE, called as a witness for the plaintiff, testified in substance as follows:

At the time I was at the Sand Gap in the fall (R. 2011) of 1907 or 1908 (R. 2009) with Mr. Davis, the sand at the bottom of the cut looked to be nothing but quicksand. (R. 2010–2011.)

Mrs. MYRTLE CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

I know that place down near Harney Lake called the Sand Reef; I rode down there for stock. I remember the occasion in 1904 when I was down there near the Sand Gap, on that Sand Reef. It was in October, I think; I saw eleven head of horses and one mule mired down in the quicksand, right at the Sand Reef, right by the channel. (R. 2293.)

3. Conditions in general at Sand Reef; break in Sand Reef

a. In the early days

Mr. FRANK WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

After the Sand Reef broke through I am satisfied I saw water standing at the foot of the Sand Reef on the Harney side and I think on the Malheur side. (R. 201–202.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

I was down at the Sand Reef before the water broke through, and the next time was after it broke through. Pete French and a bunch of us had to come back around Windy Point to get around. I saw the water about 8 or 10 or 12 feet wide; I do not know how deep it was, but it was running like everything. I cannot tell the month or the year that that happened in. It was a wet season, some time along in May or June, or thereabouts, but I could not say exactly. I have been there since when there was not much water running at all, and I have been there when it was running. (R. 278.)

Cross-examination:

I saw the Sand Reef before the water broke through it. When I saw the Sand Reef, the water on the Malheur Lake side was quite a ways back, probably quarter or half a mile that way. I first saw it probably in July when I was working for Pete French. I worked for him for a number of years. (R. 288.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, testified in substance as follows:

I have been down to the Sand Reef and have passed over it before it was broken through (by the water). I have driven cattle across there.

Mr. BLACKMAR. Do you remember when it (the Sand Reef) was broken through?

A. I am a little in a quandry about that. I have been questioned so much on it. I can say it was either 1881 or 1882, but I couldn't say positively.

Q. Well, at any rate, it happened about the time that you were married?

A. I made a little guess. I thought I was married in 1881, but I was married in 1880. My wife did not want me to (R. 467) tell when I was married anyway.

Q. Well, at any rate you saw this break in the Sand Reef a short time after it occurred?

A. I saw the first water that ran over—that opened the gap in the Sand Reef. I happened to be holding cattle on that side of the Sand Reef. I ran a buckaroo outfit here for over 30 years, and I had them

working cattle all over the country, and I was holding the cattle on my way home. We were camped there at the end of this Sand Reef and that was a convenient place to hold the cattle as you only have to hold one end, and the only way they can get away is to go north. (R. 468.)

We were at the south end of it, and I heard this water trickling through the greasewood and I went there and looked at it. It was not breaking through bigger than my hand; and when I went back there in three or four days looking for some horses, it had a channel as wide as this courthouse, about 40 or 50 feet. The water was going through it at a pretty good lick. (R. 468.)

At the time I was down there, I could not see Mud Lake from the Sand Reef. Immediately east of the Sand Reef at that time there was quite a bit of water spread out clear across the country there, but that was not what I had been told was Mud Lake. My understanding of Mud Lake is that it starts in on the north side in below the Narrows, a little west and (extends) down to the edge of the tules on the north side. That is the way I have it placed, but I am not sure where Mud Lake is as far as that is concerned.

After I came back several days after the water started to break through the Gap. I could not notice much difference in the height of the water on the east side of the ridge. (R. 469.) There was a good deal of water in the country that year. It seemed to me it kept rising all the time, it never stopped rising since 1873–1874. It just seemed to pile up. There was no outlet, there was nothing but evaporation, and every winter it would pile up. From 1874 down to the time the Sand Reef broke through, we had the finest rains in this country, more water than we needed generally all over; but we are fighting for water now. (R. 470.)

Cross-examination:

I can not tell you when I first saw the Sand Reef.

Mr. LILJEQVIST. Q. If the Sand Reef broke through according to some witnesses in 1882, and from other witnesses in 1881, we will assume for the purpose of the question it broke through in 1881, and that is the time you say it was trickling through: About how long before that approximately was it you saw it?

A. I was across there at different times, but I couldn't say at any special time, and I will tell you why: It was a (R. 480) place that people would cross when they went that way, to come over into the Warm Springs Country.

Q. That is, when they went across to the north?

A. And to the Company ranch, if they wanted to get to it, they went that way, and at the Narrows there was no crossing.

Q. Why didn't they drive their cattle across this marsh, as some people try to claim it is, and across the Narrows, why didn't they drive right across the lake anywhere?

A. There was a little mud.

I drove my stock across the Sand Reef because that was the only crossing on the lake, and the day I crossed the Sand Reef I heard the water trickling through that day I was on the Reef.

Mr. LILJEQVIST. Q. And as you looked eastward, you say you saw what (R. 481) with reference to the water? Did you see a body (R. 482) of water right up to the Reef?

A. Certainly.

The water spread out quite a bit each way. The water was bound to back up towards Mud Lake because Mud Lake was in that direction. I have not been to the Sand Reef lately.

Mr. LILJEQVIST. Q. You said you heard the water trickling through the greasewood on that Reef?

A. That is what drew my attention. I didn't only hear it, but I went and looked at it.

The water was coming in a small stream through the greasewood, and within a few days it was a big wide stream rushing rapidly.

Mr. LILJEQVIST. Q. How many years did it take to have any appreciable effect on the (Malheur) Lake?

A. That is something hard to tell. I think it had some (R. 482) little effect as soon as it had time to run off. It had to fill Harney Lake so that it backed in there, and there was no outlet to Harney Lake. (R. 483.)

Q. Did you see any evidence on that Sand Reef of it being (R. 483) cut through there any place before?

A. No, sir.

Q. There has been offered in evidence to-day some ancient writings by some of the men in the service that went through that country and attempted to describe what they saw. There is something in the record which shows that the Sand Reef (R. 484) was cut through in 1860. Now, from your judgment of that Sand Reef, as you have watched it in those early days, do you believe it was possible for that Sand Reef to have built up, and this sagebrush and greasewood to have grown upon it, which you personally saw between 1860 and 1877? Now, the Meldrum line was run in 1872, 1873, and 1874.

A. I wouldn't give an opinion on that.

Mr. LILJEQVIST. All right. You do not have to.

A. That is out of my line.

I didn't see any evidence of the Sand Reef ever having been cut through before.

Mr. LILJEQVIST. Q. And from 1881 up to the present time, that cut has existed 50 years, and it hasn't rebuilt itself, that is correct, isn't it?

A. I haven't examined it lately. It might be filled up with sand now for all I know. (R. 484.)

Redirect examination:

In the years following the breaking through of the Sand Reef, I did not have to cross with stock there at the Sand Reef. It was all dried up and you could cross most anywhere.

Mr. BLACKMAR. Q. That is, you mean you could cross the lake anywhere?

A. Yes, down in that part of it. And then that crossing came in up at the Narrows, and that stopped, and that was out of our route to go that way. (R. 488.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I crossed the Sand Reef before it broke through, and also since then. (R. 504.)

I have crossed it on horseback and with cattle. (R. 505.)

I have heard a lot of stories about the break in the Sand Reef. (R. 514–515.)

I have seen a stream of water, probably forty feet wide, maybe a little more, running through the Sand Reef; I have been down there when there was not any water running through it. (R. 515.)

I have crossed the Sand Reef with stock before the bridge at the Narrows was built. (R. 515.)

Cross-examination:

Mr. LILJEQVIST. Q. On the Sand Reef, you say it was a little lower where it cut through?

A. I suppose it would naturally be because it would not have (R. 518) broken through there otherwise. It must have been lower, otherwise it would not break through.

I could tell you how much lower it was; whether three or four feet; never measured it; that question I can not answer; even if it had been very much, I don't know whether I would have remembered it or not; I can not tell you. (R. 519.)

I do not know how the Sand Reef broke through. (R. 532.)

Mr. LILJEQVIST. I would like to ask the question. It may be objectionable. (R. 532–533.)

Q. Wasn't it common report and common understanding from the earliest days that somebody deliberately started the water going over the Sand Reef? Wasn't that understood throughout the country here?

A. Well, I have heard people talk about it, but you couldn't make me believe that. I don't know whether it was so, or not; I couldn't say.

Q. If the water was up toward the Sand Reef, it would have been perfectly possible for somebody to start it going across, wouldn't it?

A. I couldn't say as to that.

Q. There was so much water in the early days around that Sand Reef that they had to take the stock over the reef?

A. Yes.

Q. And they couldn't drive them on the Malheur Lake side of the Reef?

A. No.

Q. And not on the Harney side?

A. I guess you could go around on either side of them. I guess you could go around them; that was the only way you had to go. You had to go either plumb around them, or either side.

Q. I am talking about the Reef itself. I want to know how high the water was on the Reef.

A. How high it was?

Q. With reference to driving your stock?

A. Well, it was pretty high. (R. 533.)

We could not cross the Reef after the water had broken through the gap; before it broke through we used to drive the cattle on top of the Reef, or you could not go at all.

When I stood on the Sand Reef and looked easterly toward Malheur Lake, there was lots of water there. (R. 534.)

I do not recollect any channel at the Sand Reef there where the water later cut through, before the break occurred; (R. 534–535) and I have seen it dry immediately east of the Sand Reef after it broke through, but I have not been there for several years and I could not say whether there is at the present time a big channel that leads for miles and miles easterly of there. The last time I saw it there was a cut through the sand, and when the waters run through there (the Sand Gap) there was quite a current and it washed it out; that channel was created by the water running out of Malheur and Mud Lakes into Harney Lake (R. 535); I do not think that the channel existed before it broke through; I did not know there was any channel there before it broke through. (R. 536.)

Mr. Tobias Stilley Riddle, called as a witness for the plaintiff, testified in substance as follows:

In 1876 I rode across the Sand Reef.

Mr. Blackmar. Q. Do you remember how high the water was up on the Sand Reef at the time?

A. Well, I would have to make a guess at that. I couldn't tell positively. I should judge that the bank was 8 or 10 feet higher than the water. In some places it was lower than the Sand Reef; and other places higher, as I remember it. This was pretty nigh fifty years ago.

Q. But you think there were some places that were lower than other places on top of the Sand Reef?

A. Yes.

I was down to the Sand Reef in 1882 or 1883; I know it was before I left the country. The water was going into Harney Lake; there was just a little water standing in there. I did not cross on through, just rode up to the edge and then went back. (R. 542.)

Mr. George E. Whiting, called as a witness for the plaintiff, testified in substance as follows:

I have been down to the Sand Reef. I have not crossed it with cattle or on horseback; I have seen a stream of water running

through there about 15 feet wide. (R. 557.) That was during the dry season, in the fall of the year. (R. 557–558.)

b. 1870–1880

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, testified in substance as follows:

The first time I saw the Sand Reef was in the morning of June 15, 1878; I am not very apt to forget it, because I was shot by the Indians the evening before and stopped there and rested about twenty minutes just after sundown, after riding all night, on my way to Fort Harney. I can not describe the Sand Reef probably as correctly as if I had not been in the condition I was in (wounded), but it was just a high sand reef; and it looked uneven; there were low and high places, and on the west side it was quite a ways out to the water of Harney Lake. On the east side, the water came up pretty close in a good many places; and in those low places, the water was close to the top of the Reef. (R. 1095.) I didn't see the Sand Reef after that and before it broke through. I have been at the Sand Reef a good many times since it broke through, and I think that it broke through at one of the low places of the Reef. (R. 1096.)

Cross-examination:

When I first saw the Sand Reef, I did not pay any attention to see how wide it was, and I can not give any judgment on it because I would not know. It was wider at one place than it was in others.

Mr. LILJEQVIST. Q. How high was it from where the Gap formed afterwards?

A. Well, I have been there quite a number of times, and it was just about the level of the lake; I don't think it was (R. 1112) over ten or twelve feet.

I have seen the Reef since it broke through. (R. 1112.)

I do not know how much lower the Gap was than the Reef where the water subsequently broke through as compared with the adjoining side of the Reef, and I do not know how much lower the depression was where the water finally broke through than the other parts of the Reef, I could not say, I have no judgment on it at all. (R. 1113.)

When I saw the Sand Reef at the time I referred to, the water of Harney Lake was quite a ways out from it, I can not tell you exactly how far; it may have been a hundred, two hundred, or three hundred steps; I did not pay much attention. (R. 1114.)

In 1878 when I saw the Reef, the water was pretty close to the top of it; I guess stock could go along there. I went along, right along on the Sand Reef between the two lakes (Malheur and Harney). I did not follow the top of it all along (R. 1114); I did not measure how close the water was to the top, and I have no judgment about it. (R. 1115.)

I did not observe any indications, when I was at the Sand Reef, of it having ever broken through before. (R. 1247–1248.) I could not say as to whether it was broken through before or not because I did not pay very much attention to that as I went through there. I was suffering too bad to think about most anything. I did not go through there again until the water had broken through the Sand Reef. (R. 1248.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

It was a different country there altogether when the Sand Reef was in there. The engineers (R. 1353) could give an engineer's vision of it, but no settler could give a vision of it when the Sand Reef was in; that was a distinctive line between Harney and Malheur Lakes, and when I first saw the Sand Reef in 1879, it probably had two or three feet of water against it. On the Harney (Lake) side, the water was back anywhere from a few hundred yards to half a mile or maybe a mile. I rode across there in the fall of 1879. I had taken a couple of my friends and some pack horses and we made a tour of the Malheur country, on the east side of Malheur Valley down on Crane Creek, then to Steen's Mountain and came up to the Blitzen country and then across at the Sand Reef. That was just an inspecting trip through the country that took us probably two weeks. I intended to come back to the country and take my chances with it and bring back some more cattle. (R. 1354.)

Cross-examination:

When I saw the Sand Reef in 1879, it was about ten or twelve feet high. (R. 1370.)

The Sand Reef is very rough on top. It was used for crossing cattle. It had big trails, and I think those trails are up there.

I saw no evidence of the Sand Reef ever having been cut through before I saw it; I do not think it had been (R. 1371) cut before at any time that would interest man.

I have seen the Sand Reef since 1881 and up to the present time.

Mr. LILJEQVIST. Q. Now, did the wind blow down there in the early days as much as it blows now?

A. Well, I do not know what the wind does when I ain't down there; but I know it pretty nearly always blows when I am down there.

Q. Can you understand from your knowledge of the country, Mr. Hanley, how that Sand Reef could have built up and grown (R. 1371) greasewood on it the way it was when you saw it between 1860 and 1879, and then from 1881 to the present time—50 years, if it hasn't rebuilt itself and filled up that gap. Now, can you from your observation of that country tell us anything about that? Is it your judgment from your knowledge of that country, that in 1860 the water was flowing through it?

A. Well, I wouldn't want to say anything against any record, or any expert, but just as an observer I would be inclined to think that it hadn't.

Q. That it had not?

A. No. (R. 1372.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

In the summer of 1879, I was with an outfit of cowboys and camped on what is now known as Mud Lake, I do not think it was known as Mud Lake at that time.

The Sand Reef divided Malheur and Harney Lakes at that time, and the greater part of the Sand Reef was quite a long strip of sand thrown up in large humps with greasewood on top, and some other growths; I think some sagebrush perhaps on both sides, but there was one portion of it where afterwards that break occurred, that was not as high as either (R. 1792) that portion north or south of it, where the water has since broken through.

The water broke through that low part in 1881.

Mr. BLACKMAR. Q. Now, as you saw it there in 1879, just tell me how much difference there was between the top of the Sand Reef and the point at where the Sand Reef afterwards broke through? How much difference in feet and elevation?

A. Well, I would say there was three or four feet difference, and maybe more, and maybe less in places. Of course, that Sand Reef was irregular in shape.

The Sand Reef was composed of just sand, mostly of common sand.

Afterwards (after the break in the Sand Reef in 1881) I saw the cut in the Sand Reef.

I never did lose any cattle down in the Sand Reef, and never did see any stock down there. (R. 1793.)

c. 1880–1890

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

The water broke over the Sand Reef either in 1881 or 1882. (R. 147.) When I worked for Stringer he sent me down across Malheur Lake with a bunch of forty or fifty others. We went to the Sand Reef and crossed on the Harney side of it, which was a hundred to two hundred yards from the margin of the water of Harney Lake, and it was of a hard surface and sandy and alkali. Charlie Jones, the manager for Devine & Todhunter, said somebody told him that the Sand Reef was about to break through; somebody got on the Sand Reef and came to the place where the water run over, and he motioned to us and together with others we went up to look at it. I do not know how close the water was to the top of the bank. (R. 143.)

There was a little gulch, or low place, and it looked like it was about to run over, and someone remarked "A good stiff wind from the east with a wave would cut that through"; then we went over to the Rock Ford and it started to rain. It rained all that day and night and the following morning, and that morning we got on our saddle horses, I was short two saddle horses and I had to track them back to the Sand Reef. When I tracked them back to the Sand Reef, they were up on the bank of a cut that had been made by the water through six or eight feet; I took the horses and went back; then we came back again (R. 144) and we could not cross the Sand Reef and had to go around the OO Ranch and work our way up Silver Creek; up there about the battlefield; then we dispersed and went home from there.

The next time I was close to the Sand Reef was last February or March. (R. 144.)

Cross-examination:

I did not cross the Sand Reef in 1879; I came down from the OO Ranch on the old road that crossed those hills, and you could look over there and see Harney and Malheur Lakes. The OO Ranch is along the northwesterly side of Harney Lake—Silver Creek. (R. 156.)

The first time I saw the Sand Reef was in 1880. We went across and worked cattle on that side. I was working for Todhunter & Devine. At that time there was no indication that the Sand Reef had broken through before; I never saw anything that looked like it. (R. 160.)

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

I recall the break in the Sand Reef and once or twice I have crossed there when there was no water running through (the Gap); that was along in 1889 to 1891. (R. 194.)

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, testified in substance as follows:

I was across the Sand Reef just before it broke through. (R. 235.) I happened to be on the south side and the water was pretty high on the (Malheur, R. 240) lake side; it was about ten or twelve feet higher than on Malheur Lake (than Harney Lake, R. 240), and we rode across the Sand Reef to see the water in Malheur Lake. (R. 235.)

Cross-examination:

I was on the Sand Reef just before it broke through in 1880 or 1881. I heard about three or four days afterwards. I was with a man by the name of Tom Allen. They used to accuse us of cutting the Reef. (R. 238.)

I do not think anyone cut the Reef. I think the water was so high that the water just slopped over and cut it out. At the time I was there the water was very close to the top, and I could have taken my boot and made a little trail through the sand to let the water run through; you did not need a shovel, you could have taken your toe and made just a little trench; anything to start it; they claimed Tom Allen and I did it (R. 239), but I didn't do it. I did not see Martin Brenton or Mr. Smyth around there at that time or anyone else. There were just the two of us there; there might have been a hundred there but I wouldn't know it. (R. 240.)

The Sand Reef at that time was something like ten or twelve feet higher than Harney Lake. The water in Malheur Lake was about ten or twelve feet higher than in Harney Lake. The water east of the Sand Reef, where Malheur Lake was, was ten or twelve feet higher than the water in Harney Lake immediately to the west. There was lots of water in Harney Lake (R. 240), but it was not up to the Sand Reef. (R. 240–241.) There were low spots in the top of the Sand Reef (R. 241), and the place that went through was nearly two or three feet lower than the rest of the normal Sand Reef. That was the only time I was at the Sand Reef; I have never been back there since; and I do not know how it looks to-day. When I stood on the Sand Reef that day and looked east there was lots of water out there. I did not see any tules from where I was. (R. 242.) I do not remember how it looked from the Sand Reef toward the Narrows, but there was water everywhere (R. 242–243); it looked from the Sand Reef that you could row a boat drawing a great many feet of water, instead of a few inches. There was nothing to indicate that the Sand Reef was ever cut through before. (R. 243.)

Redirect examination:

We got onto the Sand Reef from the south side; we rode from the north end and went around. I could not tell the depth of the water on either side of the Sand Reef in Harney Lake or in Malheur Lake. (R. 244.)

Mr. WILL Y. KING, called as a witness for the plaintiff, testified in substance as follows:

I have been across the Sand Reef, and I was right there when the water broke through; it was just running through the top when I was there.

Mr. BLACKMAR. Q. It broke through at a low place?

A. Well, I didn't pay any attention to that, but I suppose it was rather low. The Sand Reef was eight or ten feet high at the time the water broke through, and the water on the Malheur Lake side was up to the top so that it was coming over, but I could not tell where the bottom of that water was on the Malheur Lake side. (R. 308.) It might have been four to six feet; I do not know. (R. 309.)

Cross-examination:

I have not been to the Sand Reef since it broke through except to pass by the end of it on each side, but I never paid any attention to it, and in the height I gave it is possible that I am mistaken in my judgment, because that was a long time ago, and if other witnesses have remembered it differently I would not say that their recollection was incorrect and that mine was right. (R. 309.)

I have not seen the cut in the Sand Reef. I have not been there since the cut was made.

The Sand Reef certainly was not 25 feet (in height). I rode right up to it on the Harney Lake side, and I could see the water, and it was whipping over, and I could see it by sitting on the horse where it was coming over. (R. 310.)

I do not believe that the Sand Reef from its foot to the top in 1881, when the water broke through, was 16 feet high. I could see the waves. The wind was blowing a little, and the waves were there and the water was running over the Reef. I was with a buckaroo outfit at the time that I was there. Mr. Smyth was present at the time and his two brothers and also Simon Bollenbaugh. Tom Allen was not with our crowd. (R. 311.)

I heard a witness testify to-day that he was there at the Sand Reef shortly before it broke through, but he was not with me or our crowd. He was there independently of me. Mart Brenton was not with our crowd.

I do not believe anyone started that water across the Reef, but somebody could have done that before we arrived there. I have heard what has been commonly said around this community for a good many years as to who started it across, but I don't believe it. I was not there all the time. There are plenty of other buckaroos in the country and it would be perfectly easy for a man to have done it. There might have been a man there an hour ahead of me (R. 312) who started it deliberately, and an hour afterwards when I came along I might have thought it was done naturally. There was just a little bit of a stream going through there when I saw it. I cannot tell you how big it was. There was no channel formed through the Reef at that time, but I heard that there was one through the Reef.

I do not remember getting on top of the Reef; all I know is I was down below on the Harney (Lake) side noticing the water slopping over the top of the Reef.

From the Sand Reef we worked right up toward the Narrows and went around that way (R. 313–314). We went up mostly through the sagebrush, but we saw Malheur Lake. We could see the water, but we did not follow right along the edge of the water. (R. 314.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, testified in substance as follows:

In the fall of 1882 I was down at the Sand Reef, after the water had broken through it. The stream running through the Gap at that

time was about sixty to eighty feet wide, although I once testified but now I back up on it, that it was about 100 yards wide. I have not been down at the Sand Reef in late years. (R. 733.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, testified in substance as follows:

I have been down in the Sand Reef at Harney Lake, and I have been familiar with it since 1883. I have seen it from time to time pretty nearly every year.

The first time I saw it, in 1883, the water was running through it; that was in the spring; it was not running much then; it had just started; later in the season I saw it when there was considerable water going through there (R. 829); since that time I have seen it dry. I did not see it dry during the eighties except in one year, and that was 1889–1890. The water did not go through there then.

The gap in the Sand Reef has not always remained the same. After it broke through, in 1883, it kept cutting down. Every time the water would come up, it would cut it out more and more, and ever since it has been getting lower. When it first broke through, there was not much of a channel there; on the east side, there was a very little channel, but now there is quite a channel there; after it went clear out, then it cut that channel clear through, and the water never backed up any more. Before that, the water would back in quite a space of country in there. (R. 830.)

Cross-examination:

The first time I was down near the Sand Reef was in 1883, and at that time there was water east of it.

I am familiar with the deep channel that runs away from Mud Lake down through the Sand Gap. (R. 831.) When I first went there there was not much of a channel there on the east side of the Reef, I mean right from the Sand Reef; it was a pretty shallow channel there.

Mr. LILJEQVIST. Q. When was this drained entirely so that bare land appeared on each side of this channel, east of the Sand Reef?

A. Well, there was a strip of country there, before it went clear out, where it would come out of Mud Lake and go in there and back up in there.

Q. Can you tell me, Mr. Dunn, whether or not, from your observation there when you saw it around 1883 whether there ever was any channel down in that country before the Sand Reef broke immediately to the east of the Sand Reef; any place gouged out in the Reef by the water?

Mr. BLACKMAR. He wasn't there when the Sand Reef broke through.

Mr. LILJEQVIST. I asked him to give his observations of it afterwards. I am trying to determine whether the Sand Reef (R. 832), after it was cut, caused this channel, or whether there was any channel there before?

A. It didn't look to me like there was. Now, you might say, for half a mile or a quarter of a mile or something like that, it didn't appear to be any channel to amount to anything.

Q. Then, to your judgment, for half a mile east of the Sand Reef there was no cutting down?

A. No, not like it is to-day.

As the channel has been cut out it has got deeper.

When I first saw the Sand Reef in 1883 there was water east of it, that is, between Mud Lake and the Sand Reef; there was a space of country in there where it backed up against the Reef where this channel was cut; there was water in there. (R. 833.)

Mr. WALTER B. PARKER, called as a witness for the plaintiff, testified in substance as follows:

I have been across the Sand Reef down there around Harney Lake. I do not remember ever driving cattle across there, but I have been around it. I have seen the cut in the Reef there; don't think I have ever been in the cut on a horse, but I have been around the cut next to the lake; none of the cattle ever got into the cut so I can not tell you whether or not it was quicksand. (R. 869.)

When I first saw the Sand Reef in the early eighties (May 2, 1881, R. 873) it looked like a permanent reef, but, of course, it was changeable and changed; you could see that it was changed by winds, and so on. It was not level across the top but in some places it was quite a bit lower than in others. (R. 871–872.) The Sand Reef had the appearance at that time of being all sand; sandy soil. I have seen sand dunes in Nevada.

The first time I was down at the Sand Reef the water had just started through it; just a very small stream. I stepped across it; that was in 1881, and I went through there with old man Stinson who was about 60 years old at that time. There were no other men of our ranch down there with us. I saw the cut through the Reef again that fall, and it had enlarged considerably; the water was not running through it, but the water was standing still there. I saw the cut made through the Sand Reef the next morning, after I had stepped across it, and the stream of water had enlarged the gap a little; it might have been 6 or 8 feet wide the next morning, something like that, and the water was running through it at quite a lively clip. (R. 873.)

Cross-examination:

At the time I was at the Sand Reef on May 2, 1881, I did not see any other men around there. (R. 873.) I came in there late in the evening, and I left there the next morning, so people could have been there that day either before or after I was there. I do not know how the cut in the Sand Reef started. I was able to step across the stream of water at that time. A man could have started that with his foot or a shovel, but I do not know how it was started.

Mr. LILJEQVIST. Q. Now, if subsequently in this hearing a witness shall appear and testify that he started that with his foot, is there anything in the nature of what you saw there that would prevent that from being possible?

A. Oh, I think that could have been possible. I went over by a very high rise in the water and, of course, it could have been done. There was a low place in the Reef where the water went through. I should imagine it was 6 feet lower than at the top of the balance of the Reef. I had not seen that place many times before that. (R. 875.)

On the north side of the Sand Reef where the water was coming through (in May, 1881) there were sand dunes that might have been 12 or 15 feet high; but on the south side (of the gap) there were not so many high sand dunes. (R. 876.)

On the Harney Lake side of the Sand Reef the water was quite a ways out from the Reef. Looking easterly from the Sand Reef I could see water; there was water up to the Sand Reef, but I could not tell how far there was open water, because of the tules which were east of the Sand Reef, and which appeared to be in the middle of the water. (R. 876–877.)

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, testified in substance as follows:

I have been down to the Sand Reef, and on top of it. I have never grazed cattle down where the cut (or gap) is. (R. 948.)

I was down there in 1885, but I do not remember exactly the depth or the amount of water that was coming through the gap, but there was a good head of water going through there then. I saw it just that one time in the fall of 1885. (R. 949.)

Cross-examination:

I did not see the Sand Reef before it broke through; the first year I saw it was in 1885. At that time the channel that leads into where the Reef had been cut through had not been dug down below the surface of the adjoining land. I know where the cut is in the gap, and I know how it has been gouged out for a long ways up, and that channel had not been gouged out at that time above the Reef. It was comparatively level above the Reef. (R. 955.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

I remember being down at the Sand Reef (in the early spring of 1881, R. 1367); I generally took a couple of boys; we did a lot of scouting seeing where the cattle were, and the water in the latter part of February (1880) was up on that Sand Reef eight or ten feet—seven or eight feet anyhow; and way up on to it; the water was away back on the Harney Lake side and there was a strong odor rising from the Harney Lake from the alkali or whatever minerals are in it. What is commonly called in this record as Mud Lake was not

known to us, only as the neck of the lake (Malheur). There was no one who supposed that the lake would ever be dry. (R. 1360.)

Cross-examination:

Now, this 1880–1881, it is very definite to me that that was the year the Sand Reef broke through, and that was the year that we had this big swamping of these cattle. Now, the engineers would know what island it was; it was up above the Sand Reef. We went on that island to get a bunch of cattle which had been known to be on there as much as two years.

That was north of the Sand Reef and out in the lake itself; it must have been a mile or more up the neck of the lake above the Sand Reef. I do not mean the gap where the channel ultimately cut through the Sand Reef; I mean on this west side (of Mud Lake). The main body of water was on the west side, and we swam our horses across there; we knew our horses, and us fellows who were going after the cattle would run and jump into the lake before we started out, so that (R. 1367) we did not have anything to dread. We got wet before we started out; that little horse that I was riding swam across there well. When we got over there the boys ran them out, and we had to pull some of those other fellows out before they got through. That was between what is now known as the Narrows and the Sand Reef, in the Mud Lake country; it was below or west of what is called Mud Lake; it was between Mud Lake and the Sand Reef; but it was not very far above. I rather think it was what is the Dunn place now. There was water way around to the south.

This bunch of stock of probably 40 or 50 had been on that island there for two years. We went after them in the last of February, 1881, the same year, but earlier, that the Sand Reef broke through. It was open water and lots of water. (R. 1368.)

The reason the cattle had not got off that Island was because they went in on the ice, and the ice went out and left them there.

Mr. LILJEQVIST. Q. Do you know if that island is now surveyed land?

A. Well, I know the Dunns claim that place.

The cattle would not come out (from the Island); they would not have come out if we had not gone in after them. We entered from the west side and swam our horses over to get them about quarter of a mile; may have been more, but it was that at least.

I saw the Sand Reef in 1879 before the water cut through it. At that time there was a foot or two of water on the Sand Reef side (east side of Sand Reef); and on the Harney side the water was way back in this stream, and this odor was coming up from the lake. (R. 1369.)

Mr. WILLIAM HENRY MCKENZIE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been down to the Sand Reef; I did not go down there when a number of persons tried to cut it through. I never knew that they

(R. 2160) ever did that; but I have heard it talked of. My father was not on that trip. I did not know that they had any trip. I heard them talking about cutting the channel through, and when it (the water) was low they wanted to dam it up; and Jim Henderson did dam it up. (R. 2161.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, testified in substance as follows:

In the spring of the year, probably June of 1887 or possibly 1888, I went up to the place referred to as the Sand Reef. Standing on the Sand Reef and looking toward the east there was water at that time immediately east of the Sand Reef; the water on the Malheur side of the Sand Reef extended eastward from the gap in the Sand Reef; it formed quite a large area that extended considerably farther east than the main body of the lake.

Since that time I have been there on the Sand Reef when that part of the lake was entirely dry. (R. 2190.)

Cross-examination:

I saw the Sand Reef either in 1887—I think it was 1887—and I am quite sure it became dry in that area east of the Sand Reef in 1889. It has filled up since that; I believe it is dry now. (R. 2194.)

Mr. MARTIN H. BRENTON, called as a witness for the defendant, testified in substance as follows:

I was at the Sand Reef between Harney and Malheur Lakes in 1881. (R. 2366.)

Mr. LILJEQVIST. Q. All right. Now, Mr. Brenton, I want you to tell the court what you know personally about the cutting of the Sand Reef between Harney Lake and Malheur Lake.

A. Well, in 1881 I was living here at this Potter place, and I lost some horses, saddle horses, and I tracked them down to the Sand Reef, and I saw where they had crossed the Sand Reef, and there was quite a lot of water out there in some basins, big kind of pot holes on top, it looked like, where they kind of broke and drug through, and water had flowed out in that. Well, I monkeyed around there quite awhile, and there was a little high place below, and I took and kind of kicked that out a bit, and the water started trickling on down there; I was there about a half hour. Then I came back here to the ranch; I had to come back (R. 2367) because I had some stock there to attend to that night. As near as I can recollect that was about the first of May, 1881.

I met a fellow here (Burns, Oregon) by the name of Walt Parker, and an old man by the name of Stinson, who were going to the Steen's Mountain belt, and they asked me if I thought they could get across down there. I said I thought they could, but the water was kind of over the Reef in one place, but I didn't know whether it continued to run or not. I told them I had lost some horses, and tracked them down that far, and I told them if they were going to

the P Ranch to tell that outfit to kind of look out for them and kind of hold them.

I did not go back to the Sand Reef until along in 1882, when it was pretty well washed out.

When I kicked the Sand Reef through, the water had not started to run from Malheur Lake into Harney Lake; it had a long ways to go. When I kicked it through it did start to run; it started down a little bank there; of course, it wasn't very swift or anything like that; it kind of dwindled along. (R. 2368.) It started with a little stream and it got a little bigger. I was there probably, I should judge, a half hour. I let my horse rest a little, and I kind of tried to check the dam in, but it would not check, and it kept on going. (R. 2369.)

SPECIAL MASTER. I would like to ask him, what did you (R. 2369) have there?

A. What did I have?

Q. To help pull out the soil to make a channel for the water?

A. Oh, I just took my toe and kicked the sand a little bit; it was just loose sand.

I probably gave it one or two kicks. It was a little small raise like that [indicating].

SPECIAL MASTER. Q. About 10 pounds of sand? Would it be that much?

A. Oh, I don't think there would be that much.

Q. About five pounds of sand?

A. Something like that; just small.

Q. Did you kick the five pounds out of the way and then the water found its way across?

A. I don't know that I kicked it all out at the same time.

Q. You only gave it a couple of kicks. You were there only a half hour?

A. I came on up above after that.

Q. Yes.

A. It had run on down quite a little bit, though, after that. (R. 2370.)

(No cross-examination.)

d: 1890–1900

Mr. RICHARD A. SMITH, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with the Sand Reef by Harney Lake and I have seen the cut in that bank. The first time I saw it was in the fall of 1891; that was when I moved to the Narrows, or what I call that part of the lake down there. They called it the Narrows post office; that is what we call that country, the Narrows there.

SPECIAL MASTER. Well, you are describing it as the postal district now.

I had nothing to do and I know nothing about shovelling the sand out of the cut in the Sand Reef, except sometime along in the nineties (R. 1304) I heard some talk about it. (R. 1303.) I was in there when it was opened up. It was cut out too large to show any evidence of people having shovelled in there or done some work there, when I saw it. I settled in there in 1891 and it was a few years after that that this broke through. (R. 1304.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with the Sand Reef up there around Harney Lake. I remember an incident there in the nineties, near to 1895, do not believe it would be earlier than 1895, somewhere around there, when some men sort of cleaned out the cut in the gap. I know we lived there a few years before the water began to go back into those little lakes, and they kind of filled in one year, and so Dad and brother and I went down there, and we were looking around, and he figured we would dig out some sand, and it was quite a job, but we didn't do much; and the next year different settlers went in there, and I was by there duck hunting, and they had teams in there, and they (R. 1318) kind of took this sand out so that the water would go through, but I wasn't there when the water broke through, but I knew it not long after it was going through, and that it washed quite a channel through there.

It was a common thing to see water and reefs, and I didn't pay much attention to it, but I think that that happened around 1895. At the time I went there to the Sand Reef and helped those men, I was 13 or 14 years old, and that is why I figure it was around 1895 or 1896, somewhere along there.

Mr. BLACKMAR. Q. The next day you say they were down there with teams. Did they have scrapers?

A. I think they had a scraper or two, but I am not sure.

Q. Did you see any of the work that was done there, so that (R. 1319) you could give us any estimate of the depth that they cut it down?

A. No; I didn't pay any attention to the depth; I couldn't say how much it was, but I imagine it was around three feet.

Since I first moved there there has always been a kind of a gap in that Reef. The operation of cutting down (in the gap) was meant to sort of open it up and clean it out, so that the water would run through. It seems as though the sand had gradually drifted in, or kind of filled in the bed of the channel in the lower part.

When I and my father were up there there was no water going through the Sand Reef. There was no water going through there when I saw the men working there the next year with the scraper. I was duck hunting, but no water went through that I know of.

I went up there afterwards and I saw a fairly good head of water going through there that same season. (R. 1320.)

The width of the stream varied quite a bit. At times I guess it was 10 or 12 feet wide; then I have seen the same stream when it was at least 30 yards wide. When the water raised in the lake it got slower, and there was an eddy like, and it didn't run so fast, and the Gap was wider. (R. 1321.)

Cross-examination:

Mr. LILJEQVIST. Q. The time the Sand Reef was opened up by you gentlemen, was that after Neal ran his survey?

A. I think so, or just about that time, or a little after.

Q. He ran the survey in the fall of 1895, and the winter of 1896?

A. It was about that time. As I say, I think it was the fall of 1895 and 1896 that that work was done in there.

I could not say how many men worked with the scraper. The reason for cutting out the sand which had blown into the Reef was to start a canal so that they could get the water to drain through; they all termed it as quicksand; it did not need but a little work to get it through and open it, which it did.

I don't know whether the purpose was to drain the Sand Reef to the east. The settlers all wanted it done; they were there and they talked, but one part of the lake was the same as another to me, and it didn't make any difference.

Mr. LILJEQVIST. Q. You had some purpose in cutting it?

A. They thought it would draw the water, but it didn't.

Q. It didn't draw it?

A. Not that I could see; it didn't make any difference, and there was as much water that fall as before. (R. 1328.)

There was a lot of water that went through into Harney Lake. It drained the country; it went through, but the water kept coming along. I could not see that it had any effect upon Mud Lake east of the Sand Reef, or that I paid any attention to.

The cutting of the Reef did not affect the water in either Mud Lake or the lake east of the Sand Reef, not enough so that I noticed it. (R. 1329.)

The work that was done at the Sand Reef was done long before the time when I rowed in a boat in 1899 or 1900 up toward the Scott Haley place, and camped on what was called an island, on which Pinto Tom lived. (R. 1330–1331.)

Mr. GUY L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

I have been up to the Sand Reef and to where the channel goes through it.

Myself and friends between 1894 and 1896 did some work upon that cut that goes through the Sand Reef. I remember that Mr. Henderson Elliott, who was the main instigator of it, but who is now

deceased, came up to our place and was talking to my father about it, saying the sand had drifted across there and formed a dam; he (Elliott) said if we took scrapers and cleaned it out, it would help lower the lake; so I was donated, and I went down there, but I do not remember how many there were of us, it seems there were four of us that worked that day. (R. 1336.) Perhaps Mr. John Thomas Ware was there, but I am not positive. Henderson Elliott is the only one I am positive of being there at that time. I was there myself, of course. I remember two scrapers that we had there. I could not say for sure how deep the cut was that we made there, but it was a narrow cut and we got in there as quickly as we could to get the water started (through the gap). I only worked one day but it was not a full day because it took time to go down there and return so I do not remember how many hours we were in there. We saw the water start through there. Later I went back there but I do not remember just how long afterwards, but it was a good sized channel there, 30 to 50 feet; maybe not that much, I do not know. (R. 1337.) I was there in after years but I do not remember whether I was there when there was no water coming through. On one occasion when I was there there was lots of water. Harney Lake was backed up almost on a level with the water above, and there was very little current to the water, but that was shortly before I left there, probably in 1897 or 1898. (R. 1337–1338.)

Cross-examination:

Between 1894 and 1896 I helped to cut out the sand in the Sand Gap. (R. 1345–1346.)

Mr. LILJEQVIST. Q. Let us see if we can identify that more accurately.

Q. Some witnesses have testified that 1894—the winter of 1894 there was a lot of snow. Now, do you know whether it was immediately following that heavy winter?

A. I know it was after we b.. lt the bridge.

I can not identify it with reference to a heavy winter, because we didn't have much snow down there. I know we had high water during that time, because we were living on the northwesterly side of the Narrows, and it came up around our house.

I do not know what effect the use of the scrapers through the Sand Reef had, but the idea of digging it out, was to help drain it.

We had snow every winter (R. 1346), but I could not say how much. I remember one winter they claimed there was three feet of snow up here in Burns. That was during the time I was there at the Narrows. Once in a while there was snow around the Narrows, but it didn't seem to last.

Mr. LILJEQVIST. Q. Of course, you know enough about the country to know if there was a lot of snow in the valley, a great portion of that would drain into Malheur Lake, and wouldn't go into the Blitzen or the Silvies Rivers; isn't that correct?

A. We know it would go to the (Malheur) lake. (R. 1347.)

Mr. GEORGE H. BOLLENBAUGH, called as a witness for the plaintiff, testified in substance as follows:

I have been on the Sand Reef, and I know where the cut in it is located. I saw some men working on that cut down there along about 1898, 1899, and possibly in 1900. At that time, we were on a spring ride branding calves. It was in the middle of June, as I remember it. We had quite a neighborhood outfit; Mr. Dunn, Mr. Frank Dunn, Mr. Ted Dunn, Mr. George S. Miller, my stepfather, Pete Miller, and Earl Miller.

At that time, after we came in one afternoon, we found Mr. W. A. Campbell and Mr. Billy Robbins working on the Sand Reef. Mr. W. A. Campbell is the same person who is known and referred to here as Red Campbell. Mr. Robbins used to live on the lakes in the nineties. I do not know where he is now. (R. 1401.) Mr. Campbell and Mr. Robbins were the only two that I saw there working; they had some shovels; do not remember if they had any picks.

We drove across on the Sand Reef, and we had wagons in there, and some of the elders asked them (Mr. Campbell and Mr. Robbins) to wait until we got out of there the next morning, and they did, because we had to go over this place (in the cut) before they dug it through. I was not in there within the next 30 days, and I do not know what effect their work had (upon the cut).

I have been down to the Sand Reef several times since then, but there has not always been water running through that Sand Reef. Some years there would not be any water at all, and other years there would be plenty of water. (R. 1402.)

Mr. BLACKMAR. Q. Generally speaking, would the water run through, say in the nineties, in the eighteen nineties, all during the year, or would it just run through the high-water seasons?

A. Well, I would say it run mostly during the high-water seasons until it run down.

Q. Have you ever tried to cross any cattle, or seen any cattle stuck in the sand down there in this breach, in the Sand Reef?

A. I don't remember as to that.

I have not lost any cattle (in there) that I know of. (R. 1403.)

Cross-examination.

I do not just remember the date I saw them (Mr. Campbell and Mr. Robbins) working on the Sand Reef down there. I came in there in 1889, and it was something like 10 years after that.

Mr. LILJEQVIST. Q. Well, you stayed there from 1889 to 1908. The reason I am asking, Mr. Bollenbaugh, is I want to find out if it is the same time these other men worked on the Reef, R. A. Smith, called Dick Smith. You heard him this morning?

A. Yes,

Q. And Paul Ware, you heard him this morning?

A. Yes.

Guy L. Hembree did not work down there, but those fellows were probably there at that time, although not working on the Reef when I saw it.

Mr. LILJEQVIST. Q. There wasn't any scraper at that time?

A. No.

Q. Do you think this was a different time?

A. I know it was.

I do not remember the date; it was something like 1899 or 1900; probably the early part of 1900. (R. 1405.)

I do not know what they opened the Reef for. They were working on it; that is all I know, and I can only tell what I saw. I suppose it was to let the water out, but I do not know what effect it had up above (the Sand Reef).

I probably did not go back there again until the next year or so, and then the water was not running through the Reef.

Mr. LILJEQVIST. Q. Then the effect of this thing was simply to allow apparently more water to run out in the higher season?

A. I suppose the water was too high to cut the hay, or something.

Q. Could they have had any other purpose to cut it other than to let some of the water out?

A. Not that I know of.

Q. Were these men interested in the Mud Lake region that were doing this work?

A. They lived up there, I understand, within the meander line.

Q. Campbell and Robbins were both up there in Malheur Lake, weren't they? (R. 1406.)

A. As I understood it; yes.

I do not remember that they said what they were doing it for.

Mr. LILJEQVIST. Q. That they were hoping to get the water down so that they could cut more grass on the islands they were on, so-called?

A. I suppose so. (R. 1407.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with the Sand Reef. The next day after I took the boat trip from Charlie Haines' place to Cane Island, in the season of 1899 (R. 1613), I took time and went down there (to see the Sand Reef). I drove down, and camped where the channel was, and where it is. It was a well-defined deep channel, full of water; it was running swift, and I went to the top of the sand dunes and looked over the edge, and there were thousands of birds, and the water was so close up to the (R. 1617) top of the sand dunes in Harney Lake that I was able to kill birds in the water with my shotgun from the crest of the dunes, and I have never seen it so since. What I would call Harney Lake was full of water that season, and the water was going through from Malheur Lake with such force that the waves were two and a half or three feet high

where they went through this Gap. I wanted to get those birds, they floated out, and I was afraid to take my boat in that swift current, and I took it down and went into Harney Lake and got these birds, and the cut then was as deep, or a little deeper than it is now; but the water was going through it swiftly, and it was certainly deep in there. The cut was wide at the top; it was cut down just like I would see road builders build a cut, and then it came to the edge of the water, and there it was straight up and down, about four feet, or four and a half feet, and the bank was straight. (R. 1618.)

Mr. W. A. CAMPBELL, called as a witness for the plaintiff, testified in substance as follows:

About that time, I had occasion to go down to the Sand Reef between Malheur and Harney Lakes; I do not remember just what year that was (R. 1973); it was after I moved on to that place.

When we got down there (to the Sand Reef) we cut a little ditch, may be 10, 15, or 20 steps; Bill Robbins was with me. We cut the ditch to see whether the water would run through it or not, but it didn't, at first; when we cut it first it didn't. I would not say positively, but more than likely we did have a good deal of water up on my place and up on Haley's place that year.

Mr. BLACKMAR. Q. Here is what I want to know: Whether or not the reason you made this cut down there is that Reef was to see if you couldn't get the water to go down a little bit, and help you with your hay?

A. Yes, sir, we did; but I wouldn't say positively if that was it, but more than likely it might have been. (R. 1974.)

Cross-examination.

At the time I went down to the Sand Reef to cut it down, there was just one other person with me, and that was Bill Robbins. The reason I wanted to cut it down I had a curiosity to see whether that water would run (R. 2244) through there or not. It did run through there after we cleaned out this (R. 2245) after we cleaned them off. At that time the water of Harney Lake and the water above (toward Malheur Lake) looked like level, one on one side of the Sand Reef and one on the other. When I cut the Sand Reef, I think the waters were about even; the eye said they were. The water went to Harney Lake; we were there about half an hour or such a matter, and the water was still running.

Mr. LILJEQVIST. Q. How high was the Sand Reef, you had to cut, to the water?

A. I could not say; it was not very high; I would not say very high, but it was not but a little ways. We just cut a shallow ditch, with a little channel.

I do not think there was any wind that day at all. I think it was a calm day if I remember right.

I have seen a lot of winds in that country; I have seen a lot of winds from all directions.

Mr. LILJEQVIST. Q. What is your opinion as to how that little bunch of sand formed there, that separated the two lakes, you had to cut down? What caused it?

A. When the wind blows the sand blows, and in whatever direction that wind goes the sand goes, and the wind may have blown there—if there was ever a channel it might have filled it up—well, I am not going any further. (R. 2246.) I do not know as I have any other reasons as to how that Sand Reef was formed. (R. 2247.)

c. 1900–1910

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

The first time I saw the Sand Reef was in 1905 to 1906. At that time there were all sorts of formations there, such as little gullies and hollows; there was greasewood growing on it; it was very rough; it was blown into all sorts of shapes; it was changing constantly. (R. 633.)

It was a shifting of the sand. I have never been through the channel at the Sand Reef, but I have been all around it. (R. 634.)

Mr. CLAUDE MCGEE, called as a witness for the plaintiff, testified in substance as follows:

In the fall (R. 2011) of 1907 or 1908 (R. 2009) I was down to the Sand Reef, at the Gap, with the Government engineer by the name of Davis, supposed to be running a level at that time. We did not run a line of levels up on top of the Sand (R. 2009) Reef at that time. We started right at the cut, and ran a level on the east bank up past Lawen, and crossed over there onto the west or south bank, and went up to about half way between Lawen and the Narrows.

At that time there was no water running in the cut in the Sand Reef.

Mr. Davis was down there at the cut, and I don't think he measured it, but he kind of guessed the width of the main channel; it was in a V shape, the Sand Reef and all. By the main channel I mean the bottom of the Sand Gap; there is a little bank on each side, and it slopes up with sands. I think he (Mr. Davis) guessed the width of it down there at about 40 feet.

At that time we were stopping at the Narrows, and someone took us down there, brought the team back to the Narrows, and we walked back, and ran the level on the way back. (R. 2010.)

Cross-examination:

At the time I was with Mr. Davis taking the levels I am not positive whether it was 1907 or 1908. (R. 2011.) I don't know the purpose for taking the levels; he took the reservoir sites, and all the streams all over the country. The levels were run from the Sand Reef up to about half way between the Narrows and Lawen.

I could not tell you whether that was the year they did some cutting down at the Sand Reef; I don't know anything about that, or what the purpose of it was.

Mr. Davis did not tell me at that point what the level was. (R. 2012.)

Mr. Haddon Elliott, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. Liljeqvist. Q. Have you ever seen Harney Lake and the waters east of the Sand Reef on a level?

A. I have seen the water when the wind would blow from the west; I have seen the water run right back through the channel (the Sand Gap) into Mud Lake.

I have a personal recollection of some of the people there, McKenzie and others, going down there once, and probably another year, trying to cut out that Sand Reef. I don't know anything about it; I can remember of them going out there; I remember my father went down there and worked on the cut. They went down to cut out a channel to let the water out. That was their idea. They wanted to let the water out so that they could cut hay (R. 2225), to lower the water and let it in Harney Lake. I could not say what year that was, and I do not remember how old I was at that time.

Mr. Blackmar. You were seven years old.

Special Master. He was born in 1888. (R. 2226.)

Mr. Liljeqvist. Q. Do you know to what extent the sand would blow down in there over the flats?

A. No, I don't; but——.

Q. Have you seen evidence that looks like snow drifts on the sand?

A. Down on the other side of the Reef, on the side next to Harney Lake. (R. 2228.)

f. 1920–1931—elevations

Mr. Chester W. Pecore, called as a witness for the plaintiff, testified in substance as follows:

The Sand Reef is just a great long ridge, extending from section 29, T. 26 S., R. 30 E., north of the lake. (R. 121.)

The Sand Reef extends from section 29, T. 26 S., R. 30 E., north of the lake around to the northwestern portion of section 19, T. 27 S., R. 30 E., south of the lake. (R. 122.)

The Sand Reef is being built up right at this time by sand off of Harney Lake; that is the way I think it originated, and I think it is still building. We found a somewhat similar condition leading to the same conclusion at the Sand Gap. It is safe to assume that when the water was running through there it was lower west of the Gap than it was at the east end, as shown by our contours; the minimum elevation in the Sand Gap is 4,083 feet 8 chains, or approxi-

mately 530 feet east of the east edge of the Sand Reef; in the very middle of the Sand Reef, in the Gap, the elevation is 4,085 feet; it has raised two feet going toward the west in that distance, and then it drops down to 4,084 feet where there is a little hill at the west edge of the Gap (R. 125); then we pick up a little hill that goes back to 4,085 feet; then at a point five chains west of the center of the Gap in the Reef the elevation is between 4,086 and 4,087 feet; so that at a point approximately five chains west of the middle of the Sand Reef, at the Gap, the elevation is four feet higher than at the point over about eight chains east of the Gap. The only excuse I could think of for that higher land in the westerly side of the Reef is that it has been brought in by winds and filled in since there has been any water flowing through the Gap in the Sand Reef. (R. 126.)

Cross-examination:

We found a great deal of evidence of ripple marks in the sand in the Sand Reef itself. (R. 2270.)

Redirect examination:

The end of the Sand Reef shows up on the map, Plaintiff's Exhibit No. 4, in section 20, T. 26 S., R. 30 E. (R. 2287) and I am quite sure that it extends farther up. Last spring, Mr. Petree and I were down there on the Sand Reef, probably in section 28, T. 26 S., R. 30 E., and I remember we remarked at the time that the Sand Reef did not just run around the north of Harney Lake, but that it ran off across the country in a general northwesterly direction until it struck the hills. (R. 2288.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, testified in substance as follows:

I have never ridden across the Sand Reef; never paid much attention to it. At the time I was in there hunting wild fowl, it was all dry east and west of the Sand Reef. That was ten years ago (1920). (R. 515–516.) That is, the lake part of it was dry. The low places, or what was once a lake, was pretty dry. It would seem to me the water is about a half or three-fourths of a mile from the east side of the Sand Reef, and on the west side of the Sand Reef I didn't pay any attention to how far the water was away from the Reef. There was no water running through the Gap at that time. (R. 616.)

g. Comparative conditions

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I saw the Sand Reef one Sunday this summer again. Compared with the first time I saw it, it looked about the same. I observed no difference in the height of the Sand Reef this last summer com-

pared with when I first saw it in 1880, it looked the same, but there might have been some difference.

At the request (of Mr. Liljeqvist) I went down there to the Sand Reef with Mr. M. V. Dodge, an engineer, and looked at it; we were talking about where we thought the water came on the Sand Reef before it broke through; I did not point out to him on the ground, or indicate where the water was before the Sand Reef broke through; I pointed out where there was some sagebrush roots up there and that it looked like the water might have been up that high; those roots were washed out (R. 157); I do not remember whether I gave my best judgment to Mr. Dodge about where the water was on the Sand Reef before it broke through, but that was one of the things Mr. Dodge desired to have me go down there to point out; we were both talking about where the water came to.

At the point in the Sand Reef where the water broke through it was of a fairly uniform height. It looked to me to be about the same. There may have been a little gulch in there; it is so long ago for a fellow to remember about how high it was in there. (R. 158.) The Sand Reef there varies in height, but (R. 159) when I saw it last summer it looked about the same. I can not say how much higher the Sand Reef was in the immediate vicinity of where it broke through, but I think it was about 200 feet wide at that point at the bottom of it.

We could not drive stock on the Malheur Lake or easterly side of the Sand Reef. I suppose we could if it was down lower, but we never attempted to drive anything on the Malheur Lake side, because it was good going and just as level as a floor on the west or Harney Lake side of the Sand Reef. (R. 159.) We did not drive them on top of the Sand Reef. (R. 159–160.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

The Sand Reef is higher to-day than when I first saw it. That lake (Harney) being dry, these big heavy winds blow the sand, and it blows it up every year since I have been down there. (R. 514.)

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I can not give any comparative heights between when I first saw it (the Sand Reef) and its present height; and I do not know what the present height is. The last time I saw it, it did not look any higher than when I first saw it.

Mr. LILJEQVIST. Q. Then, as I gather it, your best judgment is it looked (R. 1112) about the same?

A. Yes. Well, I don't know. The sand blows up, piles up around there, and at one time it would be higher and at another time it would be lower. It blows in every direction; you see those sand hills, and one day they are higher than the next. (R. 1113.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

When I saw the Sand Reef in 1879, it was ten or twelve feet high. I think it is the same reef now. It looks about the same as when I first saw it.

Mr. LILJEQVIST. Q. There is some contention that it may have been built up some.

A. Maybe it has; it might be.

Q. Sand blows up on top and blows over it too, doesn't it?

A. Yes. (R. 1370.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

When I was at the Sand Reef in 1899 the sand was blown up, shifting and moving, and I visited there this summer, and last summer, and as far as I could tell those dunes looked (R. 1618) just the same, only there was no water washing up against them; sometimes it looked as if the wind had undermined it, and it seems to me the greasewood is dying out and that there is not so much of it, but it is still there. (R. 1619.)

Cross-examination:

I do not know whether the Sand Reef has had a tendency to get lower in recent years because of the dying out of the greasewood on it. It would be hard to say (R. 1644), unless a person had made an early map of it. (R. 1645.)

Mr. MARTIN H. BRENTON, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. Now, Mr. Brenton, have you been down to the Reef to show Mr. Dodge about where the water came about the time it went through or across?

A. I was down there at the Reef along last summer sometime.

Q. From your observation of it at that place, how does the Reef look as compared with when you first saw it?

A. It doesn't look very much different than when I first saw it, only the greasewood looks bigger; it is much ranker brush; it seemed to be growed more.

I did not see any evidence of the Sand Reef having been cut before.

(No cross-examination.)

4. Vegetation

a. In early days

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, testified in substance as follows:

There were no tules around Harney Lake. (R. 236.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was greasewood and sagebrush on top of the Sand Reef. The sagebrush was four or five feet high; it was good-sized sagebrush; it probably would be from two to five inches thick; you can not tell. I never cut any of the sagebrush off to find how big the rings are, which are made each year.

Mr. LILJEQVIST. Q. If the sagebrush was two inches in diameter, it would have grown there a good many years, wouldn't it?

A. Not so very many. When it is watered like that it grows very fast. It is about the fastest thing that grows that you ever looked at.

When the sagebrush has plenty of water and not too much, it will grow fast; you can get too much water on it and kill it any place.

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

When I first saw the Sand Reef in the early days, before it broke through, it was nothing but a reef of sand in there; greasewood growing on the edge of it, pretty well up in some places. Where it broke through it was considerably lower, the Reef, than in other places because beyond where it broke through the Reef is pretty high; it is still getting higher.

It is higher to-day than when I first saw it. You see, that lake (Harney Lake) being dry, these big heavy winds blow the sand, and blow it up every year since I have been there. (R. 513–514.)

Cross-examination:

I saw greasewood on top of the Sand Reef where it broke through; have seen greasewood on parts of it; might not have been on top, but it was pretty well up; have not been there for some eight years; might be greasewood growing there now, I don't know. The greasewood was not growing on top of the Sand Reef in the early days according to my recollection (R. 519); it was pretty well up; might not have been on top, but I do not say there was not any there; simply don't remember. (R. 519–520.)

MR. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Now, on top of that Sand Reef do you remember any greasewood or sagebrush growing? You said you crossed it once on horseback?

A. Yes, I think so. There was sagebrush on there and greasewood. I think there was greasewood in places on that Sand Reef. (R. 547.)

After the Sand Reef broke through, I crossed it and saw it; I do not remember whether the place where it cut through was higher or lower than the rest of the Sand Reef in that vicinity. (R. 547–548.)

b. 1870–1880

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, testified in substance as follows:

When I first saw the Sand Reef in 1878 there was some greasewood growing on it, bunches of greasewood, and where there was greasewood, the sand was piled higher than it was on other places; it was like sand blows up and piles up. (R. 1096.)

Cross-examination:

I do not know whether or not I saw any greasewood on the top of the Sand Reef at the place where it subsequently broke through. You are asking some questions that I don't think I can answer. (R. 1114.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

When I first saw the Sand Reef in 1879 there was no sagebrush on it. (R. 1370–1371.) It had greasewood clear across it; over the entire top of it, and on the sides of it. (R. 1371.)

It was very ordinary greasewood that was on the Sand Reef (in the early days); a poor quality of greasewood; it was not good greasewood. (R. 1372.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

The time I first saw the Sand Reef in the summer of 1879 it had greasewood on top and some other growths, I think some sagebrush perhaps on both sides. (R. 1792.) It had greasewood and probably some rabbit brush and sagebrush, but I think greasewood seemed to be the principal growth. Of course, there were some grasses there also. (R. 1793.)

Cross-examination:

In the summer of 1879 there may have been a little greasewood where the Gap was formed afterwards (in 1881), but there wasn't as much as there was to the side north or south. It seemed to be lower.

There was no direct evidence that the Sand Reef had been cut through before. A person might have drawn a conclusion of that kind that it had been. There was nothing unreasonable about thinking it might have been cut through at some time. I have been familiar with the Sand Reef from 1881, not so very much in late years, not to the present time. I have not been down in that vicinity for many years.

At times the wind blows very strongly down in that country. I was never on the Sand Reef when there was a strong wind blowing. (R. 1794.)

I did not go past the Sand Reef in 1874. I was quite a distance from it then. (R. 1795.)

c. 1880–1890

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was sagebrush and greasewood growing on top of the Sand Reef at the point where it subsequently broke through. I could not tell the age of that vegetation. (R. 160.)

Mr. WALTER B. PARKER, called as a witness for the plaintiff, testified in substance as follows:

I have seen plenty of greasewood there on the Sand Reef, but I do not think there is any sagebrush there. The sagebrush would be farther back, I don't think there is any in that kind of soil (at the Sand Reef). But there is plenty of greasewood there. (R. 869–870.)

Mr. BLACKMAR. Q. I mean, what about the greasewood in the Sand Gap?

A. Oh, you would see greasewood growing on top of those sand dunes 10 or 12 feet high, and on the lower ground. (R. 870.)

Cross-examination:

Mr. LILJEQVIST. Q. Was the greasewood immediately in, or right at that hollow in the Sand Reef where it was cut through?

A. Oh, yes; there was greasewood.

Q. In other words, was the water going through that Reef in places right in the immediate vicinity of where the greasewood was growing?

A. There was greasewood on each side of the cut where the water was running through when I was there. (R. 875.)

That greasewood was small, it might have been 2 or 3 feet high, wouldn't say as to that, had the appearance of being that kind of a grade; I think it was smaller at that place, and the larger brush was on the highest sand dune. (R. 876.)

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, testified in substance as follows:

In 1885 when I saw the Sand Reef the greasewood grew in spots on top of it, but there was none at the cut (or the Gap), but along the top of the Reef there was greasewood. I was on top of it on horseback. (R. 949.) I observed that the surface of it was pretty sandy. (R. 950.)

d. 1890–1900

DR. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

With reference to the vegetation on top of that Sand Reef, it was just about as it is now; there was quite a covering of greasewood. There was some so big I could stand upright and be hidden from the birds; then there would be quite open places, and some none at

all, and on the east side it went down and joined the greasewood that was on the level or flat; on the west side it went over the crest. (R. 1618.)

e. 1900–1910

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

When I saw the Sand Reef from 1905–1906 it had greasewood growing on it. (R. 633.)

f. 1920–1931

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, testified in substance as follows:

There is a fair growth of greasewood on the Sand Reef. On the western side the sand has blown out from under the roots of the greasewood leaving them exposed; there is a great deal of greasewood that has been killed by having the sand blown away from the roots.

On the eastern side sand has been piled up over the vegetation and some of it has been killed by smothering. (R. 122.)

g. Dead sagebrush and greasewood

Mr. WALTER B. PARKER, called as a witness for the plaintiff, testified in substance as follows:

There was not much dead greasewood on the side of the Sand Reef; it had been overflowed, and I don't think there was any there, but there might have been, that is, in that particular point in the Sand Reef. (R. 871.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, testified in substance as follows:

When I was at the Sand Reef I observed stubs in there of greasewood or sagebrush. They covered quite a large area between the Sand Reef and Mud Lake on the east side of the channel, extending from Mud Lake toward the Sand Reef. (R. 2190.) I examined the stubs, and I think they were greasewood stubs but I am not so confident to be able to say definitely what they were. They were rooted into the ground, and I will explain how I came to notice them. Before the ground was exposed in that vicinity I had noticed dark objects out in the lake bed, and when I first saw them I thought for a while they were ducks out there; I watched them, and there being no movement I could not understand what was there. After the ground was exposed I went out for the express purpose of examining those stubs or objects, and at that time I found they were that growth. (R. 2191.)

J. Inspection Trip of Lakes and Vicinity. Taken by Special Master et al., November 1, 1931

EVIDENCE RELATING TO

1. Members of the party

Mr. Chester W. Pecore, recalled as a witness for the plaintiff, testified in substance as follows:

Those present on the inspection trip made to the lakes by the Special Master and representatives of the parties to this law suit were:

Hon. Garret W. McEnerney, the Special Master; Charles M. Blackmar, Esq., Special Assistant to the Attorney General; W. F. Staley, Esq., Assistant Solicitor, Department of Agriculture; L. A. Liljeqvist, Esq., Assistant Attorney General, State of Oregon; Mr. Mott V. Dodge, civil engineer; Mr. L. T. Jessup, civil and hydraulic engineer; Mr. Chester W. Pecore, cadastral engineer; Dr. R. C. Clark, historian, University of Oregon; Mr. F. L. Hart, reporter; Mr. R. A. Lawson, reporter; Gene Goodlow, chauffeur. (R. 2249.)

2. Course followed on trip

Mr. Chester W. Pecore, recalled as a witness for the plaintiff, testified in substance as follows:

The party left Burns at 10.30 a. m. on Sunday morning, November 1, 1931, followed the Burns-Crane highway to a point about three miles north of the western end of Saddle Butte; then followed a secondary road south and west of Saddle Butte to a point in section 24, T. 25 S., R. 32½ E.; then southerly along a secondary road to a point in the lake bed of Malheur Lake in lot 12, section 20, T. 25 S., R. 33 E., where a stop was made for perhaps half an hour, and the party looked over the lake and examined some maps; from there we went south along the western side of Pelican Island to a point about half a mile southwest of the meander corner of sections 28 and 33, T. 25 S., R. 33 E.; and thence easterly to the bank near the 1877 meander line in section 34, of T. 25 S., R. 33 E.; thence southerly and easterly to a point perhaps a quarter of a mile west of the northwestern end of Windy Point, where lunch was eaten; and after lunch we went east perhaps a quarter of a mile to the intersection of several roads just at the northwestern point of Windy Point and examined an old well that was there, and Mr. Dodge pointed out what he thought might be a bank north of Windy Point; then we went west to what is known as Dunn's Well, indicated on Plaintiff's Exhibit No. 3 as a "Well" in the southern end of Pelican Island; and thence northwesterly to a windmill indicated on Plaintiff's Exhibit No. 3 about a mile and a half north and a little east of the meander corner of (R. 2250) sections 13 and 18, T. 26 S., Rs. 32 and

33 E.; and thence down a secondary road to Cole Island, and northerly along a secondary road on Cole Island to a tower indicated on Plaintiff's Exhibit No. 3 about two miles north of the Neal meander corner of sections 14 and 23, T. 26 S., R. 32 E. A stop was made at the tower, and the party then proceeded down Cole Island to the tower shown on Plaintiff's Exhibit No. 3 as being about a mile west of the meander corner of sections 22 and 23, T. 26 S., R. 32 E., south of the lake; and from there southerly and westerly along a secondary road shown on this map as passing near the house of T. Dumm in lot 2, of section 31, T. 26 S., R. 32 E., south of the lake; and from there east about a mile and a half to the intersection of a road, following near the 1877 meander line, with a road running west along the east and west center lines of sections 5 and 6, T. 27 S., R. 32 E.; thence westerly along that road to a point near the line between sections 1 and 6, T. 27 S., Rs. 31 and 32 E., south of the lake, where a stop was made on top of a hill, and the lake viewed by the members of the party; then they proceeded west to Voltage, and north to the road along the south boundary of section 36, T. 26 S., R. 31 E.; and thence westerly along that road to the Sodhouse Spring in section 35, T. 26 S., R. 31 E., south of the lake, where another stop was made; and from the Sodhouse Spring westerly to the Narrows; and from the Narrows southwesterly along a secondary road to a point on the southeast shore of Harney Lake, or near the southeast shore of Harney Lake, rather, very near the township line between sections 25 and 30, Tps. 27 S., R. 29½ E., and 27 S., R. 30 E., south of the lake. From the last point we followed in a northeasterly direction, and along the western edge of the Sand Reef to the gap in the Sand Reef as shown on Plaintiff's Exhibit No. 4, just north of section 18, T. 27 S., R. 30 E., where the party stopped and viewed the Sand Gap; and from the Sand Gap returned to the Narrows over the same road that had been followed from the Narrows to the Sand Gap, stopping at the Narrows bridge. The Narrows bridge is just west of the northwest corner of lot 6, section 26, T. 26 S., R. 30 E.; and from the narrows bridge, the party proceeded to Burns, along the Burns-Narrows highway, over Wright's Point. I forget the hour we returned to Burns, but it was well after dark. (R. 2251.)

3. Water conditions Malheur Lake

a. November 1, 1931, within Neal Meander Line of 1895

Mr. CHESTER W. PECORE, recalled as a witness for the plaintiff, testified in substance as follows:

The first open body of water in the Malheur Lake that was seen on that trip was out in the vicinity of, and just north of, the Grain Field shown on Plaintiff's Exhibit No. 3, north of the Neal meander

line in section 31, T. 26 S., R. 32 E., and it was estimated to be about 400 acres covering all the pools there were in the lake. It was not one body of water of 400 acres.

Then there was water (R. 2252) flowing into the lake from the Sodhouse Spring; the Blitzen (River) was not flowing any water at all on that day, November 1, 1931. (R. 2253.)

4. Water conditions Harney Lake

a. November 1, 1931, with reference to Neal Meander Line of 1895

Mr. CHESTER W. PECORE, recalled as a witness for the plaintiff, testified in substance as follows:

No open water was seen in Harney Lake. There is a spring about half a mile west of the meander corner of sections 18 and 19, T. 27 S., R. 30 E., that was seen from the Sand Gap; and there is a larger spring a mile or a mile and half almost north of that one that was also seen from the ridge of the Sand Gap. That was the only water that I remember of. (R. 2253.)

5. Conditions of land

a. November 1, 1931; within Neal meander line of 1895

Mr. CHESTER W. PECORE, recalled as a witness for the plaintiff, testified in substance as follows:

There was some mud down there in the Neal meander line at the time the inspection trip was made which I would estimate to be probably one thousand acres at least, perhaps a little more than that, around the edges of that water, that would be pretty muddy to cross on foot. The rest of the land within the Neal meander line was dry. (R. 2253.)

K. STATE BENCH MARKS

EVIDENCE RELATING TO

1. 1931. In general—elevations.

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I do not know what elevation was stamped on the State bench mark, down at the Narrows, but there was about three-tenths of a foot difference between that bench mark and the elevation determined by me. I did not pay a whole lot of attention to those State bench marks; we took them where we could find them. (R. 2256-2257.) There are a half dozen different reported elevations to that bench mark, there having been surveys run to and from it by different parties. I believe 4,096.20 is one of the reported elevations

we had on that bench mark. Our adjusted elevation at that bench mark is 4,095.868. (R. 2257–2258.)

I found a bench mark at a point two miles northeast of the Narrows, one foot from the east gate post in fence on the south side of bare lake bed, drag tooth driven flush. I cannot give our elevation at that point now, as I do not have my data with me this morning. (R. 2258.)

There are two bench marks at the Howell oil well. Our elevation is 4,097.537; but I cannot tell without looking at my notes to which one of those bench marks the elevation given applies. (R. 2258–2259.)

Mr. BLACKMAR. And what is your figure on it, Mr. Liljeqvist?

Mr. LILJEQVIST. 4,097.66. (R. 2259.)

Mr. BLACKMAR. Now, Mr. Liljeqvist, there only seems to be three-tenths of a foot difference.

Mr. LILJEQVIST. Let me save some time.

SPECIAL MASTER. May I ask for these two figures again? What is your figure at the oil well, Mr. Liljeqvist?

Mr. LILJEQVIST. At the oil well, one mile southwest of the corner—there are two of them, and now let us get the right one. Which one have you identified?

A. At the Howell oil well?

Mr. LILJEQVIST. Yes. Are you using a six-inch well casing, or the other one?

A. I can't tell you without looking at our notes, Mr. Liljeqvist.

Mr. LILJEQVIST. I see.

SPECIAL MASTER. What figure did you give, Mr. Liljeqvist?

Mr. LILJEQVIST. 4,097.66. That would only be——

SPECIAL MASTER. 13 one hundredths of a foot less.

Mr. LILJEQVIST. In order to save some time, and for the (R. 2259) purpose of checking up, I will hand you a document which I wish to be marked for identification.

SPECIAL MASTER. Just have it marked, and you are going to follow it up?

Mr. LILJEQVIST. Yes.

SPECIAL MASTER. Let that be marked "Defendant's Exhibit X–1." Will you say what it is, Mr. Liljeqvist?

Mr. LILJEQVIST. It is a report on Malheur Lake, a survey made by the State Engineer of Oregon to the State Land Board, dated March 12th, 1923.

(Thereupon the said document was marked "Defendant's Exhibit X–1.")

Mr. BLACKMAR. I just want to suggest this: As I understand it, there is only this difference of three-tenths of one per cent on the surveys. Now, I cannot see that a difference of four inches one way or the other makes any difference on this. (R. 2260.)

SPECIAL MASTER. If Mr. Liljeqvist and Mr. Pecore are speaking of the same bench mark described as the Howell oil well, the difference was .123—less than an eighth of a foot. (R. 2261.)

2. Defendant's Exhibit No. X-1, Malheur Lake Survey of 1922, by R. D. Cooper, giving elevations

A copy of Defendant's Exhibit X-1 (R. 2260) is as follows:

Malheur Lake Survey, 1922

Harney County, Oregon

Authorized by Oregon State Land Board

Direction State Engineer

R. D. Cooper, Salem, Oreg., Field Assistant

SALEM, OREGON,
March 12, 1923.

Mr. PERCY A. CUPPER,
State Engineer,
Salem, Oregon.

DEAR SIR: Malheur Lake surveys have been made and data assembled substantially in accordance with your instructions of March 22nd, 1922. Results of surveys and observations are set out in detail on pages following.

Maps have not been specially prepared to accompany this report as you have on file in your office numerous Malheur Lake maps. Refer particularly to map prepared for Oregon cooperative work, showing approximate contours of lake bed. Refer also to contour maps of Mud Lake flat and western portion of Malheur Lake, surveyed by M. V. Dodge of Burns, Oregon, showing soil classification by E. R. Greenslet.

Respectfully submitted.

(Signed) R. D. COOPER.

Malheur Lake Survey, 1922

Authorization: The Oregon State Land Board, about March 1st, 1922, authorized certain engineering work on Malheur Lake, to be done under the direction of State Engineer Cupper. On March 22nd, Mr. Cupper wrote a letter of instructions, outlining the work substantially as follows:

"Establish at least four staff gages, in addition to the one heretofore established at Narrows, to be located as follows:

"No. 1 near mouth of Blitzen River on South Side.

"No. 2 near the east end of the lake.

"No. 3 near the mouth of Silvies River.

"No. 4 near the west end of the lake, in a northeasterly direction from Narrows.

"The gages to be tied together by a closed level line to be run around the lake. The gages should be so located that they can be extended up or down to follow the water elevation of the lake during the extreme seasons, and should be made with reference to a permanent bench mark.

"In running the level line, tie all corners accessible and take water elevations at frequent intervals in order to determine the relative elevation of the meander line.

"You should arrange to have each gage read at intervals varying according to the fluctuation of the water elevations."

The spring of 1922 was late. March was cold and stormy with considerable snow fall. Prospects were that when the spring break-up should finally start, that streams would rise rapidly. It was therefore necessary to establish lake gages at a time when roads were heavy and traveling was very slow.

Being unable to reach Harney Valley at what appeared to be the proper time to install gages, I had Mr. M. V. Dodge of Burns establish them. Mr. Dodge completed this work on March 24th, substantially in accordance with Mr. Cupper's instructions. Location and description of gages together with subsequent elevation ties will be given elsewhere in this report.

Arrangements were made for gage readings at all points. The original plan was for simultaneous readings each Sunday forenoon. As several of the readers could not meet this schedule the plan was not carried out. Frequent readings were made, however, at each gage, and the results have been platted to scale and shown herewith. From an inspection of the water surface diagrams it will be noted that:

1. Gages at Shown Bridge and at mouth of Blitzen River read somewhat high owing to the gages being on line of inflow, the former showing the effect of dams being removed from channel above the gage.

2. Varying relation between water elevations at Graves' ranch, Pelican Point, and the Biological Gage is apparently due to effect of wind.

3. Narrows gage: Water surface at this point was several inches lower than the main lake from March 24th to April 2nd, probably due to shallow water east of the Narrows being frozen and preventing water from finding its level.

After ice had melted and before notable inflow had entered the lake this gage rose practically to lake level during latter part of April. When the lake was receiving considerable inflow, during May and early June, a difference in elevation between Narrows and main lake probably indicates that the dense tule retarded a westerly movement of water.

4. Pelican Point gage may be taken to represent main lake during July, August, and September. By comparison, note that water fell much more rapidly at Narrows, Graves, and at Shown Bridge.

This indicates that these gages were cut off from the main lake by low reefs or ridges. When water surface falls below the top of these ridges, the level drops faster in the small areas than it does in the main lake.

In general, gage data shows that a portion of Malheur Lake, below certain water surface elevations, cuts into numerous smaller lakes or ponds, separated from each other and from the main lake by low reefs or ridges.

That water surface at Narrows, above elevation 4,093 feet represents general lake level fairly well, being from 0.3 to 0.5 feet low when the lake is receiving much inflow. Below elevation 4,093 the water level at Narrows probably bears no relation to the main lake.

That most of these gages have already served their purpose and that further records may reasonably be limited to the Narrows gage and one gage in main body of lake at a point which does not become isolated at low water. While the Biological gage has not been tied to level line it has been fairly well related to actual datum and doubtless shows lake level as well as any one gage could do. The gage at Pelican Point is reliable but rather remote from habitation. The Graves gage is reliable except for comparatively low water readings.

Levels

During the latter part of August a level line was run from the U. S. G. S. bench mark at Narrows to Pelican Point. From Narrows to Graves' ranch this line was double pegged, the party consisting of levelman, two rodmen, and a recorder, the latter also keeping the car near the work. This method proved to be rather slow and expensive and was discontinued. From Graves' to Pelican Point the same party ran a single turned line, using targets on the rods, making better progress.

Late in September, with the help of one rodman, I ran level from Narrows along south side of Malheur Lake to the mouth of Blitzen River and tied all gages to lines already run.

Instructions for this work called for a level line to be run around Malheur Lake, a closed line. However, when the gages had been tied to base lines, and lake levels compared, the elevations appeared to be consistent and satisfactory. Permanent bench marks had been set at points convenient for us in future work. The advantages to be gained in closing the circuit did not appear to justify additional time and expense, therefore the work was considered complete.

Location and description of benches set during these surveys will be found in tabular form herewith.

Datum: All elevations in this report are based from the United States Geological Survey standard iron pipe bench mark at Narrows, Oregon, located about 60 feet from southeast end of Narrows bridge south of fence on south side of road. It is not probable that the U. S. G. S. have an instrument line run to this bench. Cooper &

Dodge, of Burns, Oregon, used an assumed elevation during a survey in February, 1914, running lines in the vicinity of Malheur Lake. A tie line was extended to the U. S. G. S. bench in front of the court-house at Burns. This work was done with long turns, using a stadia board for a rod. The error in this work is probably less than one foot in the thirty miles of line involved.

Equating sea level datum back on this line from Burns, the U. S. G. S. bench at Narrows is at elevation 4,096.20 feet.

Malheur Lake levels, 1922—Bench mark north side of lake

	In feet
At Narrows, U. S. G. S. standard iron pipe bench southeast of Narrows bridge	Elev. 4,096.20
Two miles northeast of Narrows, one foot from east gate post in fence on south side of bare lake bed, drag tooth driven flush	Elev. 4,097.31
Fence corner, fences north, west, and east, one foot west of corner post, peg	Elev. 4,097.92
Mrs. Griffin's, half mile southwest of house, two feet southwest of fence corner, peg	Elev. 4,093.51
Haley ranch, one-half mile west of corner of fences north, south, and east, peg west of corner post	Elev. 4,096.16
Haley Ranch, east gate post two hundred feet southwest of house, old BM is an iron rod driven flush two feet east of post:—	
Old survey (1914)	Elev. 4,095.36
New survey (1922)	Elev. 4,095.55
New bench mark is a Ford rear axle and hub, set nearly flush with hub end down	Elev. 4,095.62
Howell's oil well, one mile southwest of, corner of fences north and west, iron bolt driven nearly flush two feet west of corner post	Elev. 4,095.08
Howell's oil well, three hundred feet southeast of, north edge of flange of six inch well casing one foot or more above ground	Elev. 4,097.66
Northeast of oil well three-fourths mile, iron bolt one foot south of south gate post in N. & S. fence	Elev. 4,097.83
Graves' Ranch, one mile west of, peg four feet from west post of gate with cross bar	Elev. 4,096.04
Graves' Ranch, one hundred yards north of barn, three feet west of west gate post, bench made from galvanized gas pipe, 1½" x 42" set three feet in ground. Bottom end is flanged and set in concrete. Top is capped and stamped "State B.M."	Elev. 4,099.37
Iron pin two feet west of B.M.	Elev. 4,098.98

In feet

Herman Ruh Ranch, west fork of Silvies River under fence on south side of public road, twelve posts west of gate and four hundred feet east of river bridge, gas-pipe bench same as the bench at Graves'---------- Elev. 4,098.34

Lloyd Culp's, one-half mile east of house at right angle in road, iron rod 5/8" x 24" driven flush, three feet west of corner post, north side of road-- Elev. 4,094.43

Fred Otley, sr., fence corner one hundred feet northwest of house, iron rod 1/2" x 18" driven near corner post 0.1 feet above ground---------- Elev. 4,096.37

Fred Otley, jr., fence corner four hundred feet northeast of house, iron rod 1/2" x 18" driven flush one foot north of corner post---------- Elev. 4,096.83

James Ord, one-half mile north of house at fence corner east side of road, iron rod 5/8" x 24" near the north side of corner post, 0.1 feet above surface of ground---------- Elev. 4,095.05

Saddle Butte, one-half mile west of, just north of old deserted house, one foot west of gate post, drag tooth driven about flush---------- Elev. 4,095.12

Saddle Butte, one-fourth mile southwest of, south side of east gate post in east and west fence, iron rod, 1/2" x 18" driven flush---------- Elev. 4,095.67

Saddle Butte, one-half mile southeast of, one foot east of east gate post, iron rod 1/2" x 18" out of ground about 0.1 foot---------- Elev. 4,097.64

Saddle Butte, one mile southeast of, high gate with heavy juniper posts and cross bar, south side of east and west lane—iron rod 5/8" x 24" six inches north of west post, 0.1 feet out of ground---------- Elev. 4,099.60

Pelican Point, two miles southeast of Saddle Butte, greasewood ridge extending into lake toward Pelican Island, at high gate with yoke, in east and west fence crossing point. Iron rod 5/8" x 24" two feet west of west gate post, 0.1 feet out of ground---------- Elev. 4,097.48

B. M. of galvanized gas pipe, 1 1/2" x 42" with bottom end flanged and set in concrete, top is 0.5 feet above ground, capped and stamped "State B. M.", two feet west of iron rod---------- Elev. 4,097.90

Zero of gage two hundred feet west of bench---------- Elev. 4,091.01

Malheur Lake Levels, 1922—Bench marks
South side of lake

Narrows, U. S. G. S. B. M. formerly described---------- Elev. 4,096.20

Narrows, two miles east of, north side of road at forks, iron rod 1/2" x 18" six inches southwest of corner post, 0.1 feet out of ground---------- Elev. 4,110.49

	In feet
Narrows, 2.6 miles east of, at fence corner north of road opposite Otis Sizemore house, iron pin 1″ x 10″ driven flush, one foot southwest of post	Elev. 4,104.09
Sod house school, one mile west of, at fence corner south of road, bolt ½″ x 24″ with square head, driven nearly flush one foot northwest of post	Elev. 4,098.75
Sod house school, at gate in front of, rear axle of Ford car set hub end down, top 0.2 feet out of ground four feet east of gate	Elev. 4097.95
Dunn's house, opposite, on south side of road, near east gate post, 5/8″ x 12″ bolt driven flush	Elev. 4097.12
Ed. Springer's house, at gate in front of, north side of road, 3/8″ x 3″ x 24″ spring steel, 0.1 foot above ground near east gate post	Elev. 4097.53
Alva Springer's house, at small gate in front of, one hundred yards east of Springer's Spring, two feet east of gatepost, galvanized pipe 1½″ x 42″ set 36″ in ground in concrete, top is capped and stamped "State B. M."	Elev. 4100.97
George Benson's Cabin at mouth of Blitzen River:	
Two feet north of small gate west of cabin, 3/8″ x 3″ spring steel 24″ long driven nearly flush	Elev. 4096.39
Top of pitcher pump near cabin	Elev. 4098.01
Zero of lake gage northeast of cabin	Elev. 4091.36

End of line of levels

NOTE.—Elevations at several points on meander line range in elevation from 4094.2 to 4095.8.

Malheur Lake, 1922—Location and description of gages

	In feet
Narrows, neck or channel connecting Malheur Lake with Mud Lake; gage consists of a 12-foot stadia board nailed to south side of bridge, the zero or bottom being at Elev. 4,087.98. The bench to which this and other gages are referred is a standard U. S. G. S. iron pipe bench located inside of fence on south side of road, east of bridge	Elev. 4096.20
Graves' Ranch, west of West Fork of Silvies River: Gage is located about one and a quarter miles south of Graves' house, in edge of lake on west side of N. & S. fence; installation consists of 3/4″ galvanized gas pipe fitted with augur, bored four feet into lake bed—with six-foot vertical staff gage attached to pipe with U bolts. Zero of gage	Elev. 4091.02
Top of pipe to which gage is attached	Elev. 4097.32
Bench five hundred feet north of gage, west side of fence, 24″ well point driven nearly flush	Elev. 4095.93

In feet

Secondary gage, at Graves' house, metal gage on post near windmill, zero of gage ---------- Elev. 4090.40

Shown Bridge, mouth of West Fork of Silvies River below Herman Ruh Ranch. (Shown Bridge is near old house with cupola.) Six-foot staff gage nailed to end of cap of north center bent of bridge. (NOTE.—The bridge appears to have settled at west side, rising east side, see gage elevations):

Zero of gage when set, March 22, 1922 ---------- Elev. 4091.00
Zero of gage May 3, 1922 ---------- " 4091.10
" " " Sept. 24, 1922 ---------- " 4091.22

Bench for this gage is top of well pipe near house about two hundred feet from gage ---------- Elev. 4096.39

Pelican Point near east end of lake, two miles southeast of Saddle Butte where greasewood ridge extends into lake toward Pelican Island; ridge is identified at some distance by high gate posts with yoke; Gage consists of 3/4" galvanized gas pipe fitted with auger, bored five feet into lake bed, fitted with six-foot staff gage fastened with U bolts; gage is west of greasewood ridge:

Zero of gage ---------- Elev. 4091.01

Bench mark is 1½" pipe B. M. near high gate as described in level notes ---------- Elev. 4097.90

Blitzen River, at mouth, gage in swamp northeast of George Benson's cabin, constructed same as gages at Graves and at Pelican Point:

Zero of gage ---------- Elev. 4091.36
Top of pipe to which gage is attached ---------- Elev. 4097.3

For bench mark see level notes.

NOTE.—The Biological Survey has a gage made of 1½" gas pipe, located about one mile northerly from gage described above. Levels could not be extended to tie the elevation.

Malheur Lake drainage—Outlet

Drainage of Malheur Lake to the east through Malheur Gap and into Malheur River has been contemplated at various times by different promoters, on the supposition that the lake had naturally drained that way in former times and that a canal could be made with reasonable facility which would lower the water surface of Malheur Lake several feet.

In 1913, a survey was made by Cooper, Dodge, and McConnell, of Burns, to determine the feasibility of the Malheur Gap outlet. The results of this work are not at hand, but it was found that a canal would need to be 12 or 14 miles long with a depth of 10 to 30 feet or more to effect the desired drainage. The scheme was abandoned.

Harney Lake is the only alternative outlet. This is a large alkali depression, a sump for the entire Harney Basin drainage comprising Silvies River and numerous smaller streams from the north and east, Silver Creek from the northwest, and Blitzen River from the south. All of this drainage except Silver Creek enters first into Malheur Lake, then through a narrow channel at Narrows into Mud Lake, thence through an outlet channel and into Harney Lake.

These natural channels take water from Malheur Lake rather slowly, and at best sufficient water remains in the so-called lake to maintain a tule marsh. Reclamation of any portion of this marsh will consist in holding water off from it or providing an outlet channel which will lower the water table below ground surface, and the use of water under control for irrigation.

Water surface elevations have been determined at times on both Malheur and Harney Lakes. Many notes were taken on an assumed datum, but it has been possible to equate these on sea datum with reasonable accuracy, as follows:

Date	Malheur Lake	Harney Lake	Difference
July 14, 1913	4,094.6 Narrows	4,084.7 Sand Gap	9.9 feet.
Sept. 13, 1913		4,084.3 " "	
Feb. 11, 1914	4,094.1 Narrows		
May 4, 1914	4,095.1 Narrows	4,086.5 " "	8.6 "
" " "	4,095.4 Haley's	" " "	8.9 "
Oct. 24, 1914	4,093.4 Haley's	4,084.9 " "	8.5 "
Apr. 19, 1915	4,093.9 Haley's		
May 31, 1916		4,085.0	
May 21, 1918	4,093.6 Narrows	4,084.0 or less	9.6.

In May, 1918, McConnell and Cooper, of Burns, ran a line of levels from the Sand Reef Gap on south side of Harney Lake to determine water surface elevation. More work was put on this line than in any previous attempt, wading mud until it became impassable. The lowest elevation obtained was 4,084.0, which was above water surface. Sheets of shallow water were observed at elevations higher than the low mark noted and it is quite possible that in former levels, such ponds have been mistaken for actual lake surface. In that case the difference in elevation between the lake would have been more than is shown in above notes.

Apparently it will be safe to assume that under average conditions of the past several years the fall between Malheur Lake and Harney Lake is at least nine or ten feet.

Estimated cost of levee construction

For estimate purposes a table is given below showing cross section areas in square feet for embankments 4, 5, and 6 feet high, side slopes 3 to 1 and 2 to 1; with top widths 10 feet to 20 feet.

Height of fill	Top width of embankment in feet					
	10	12	14	16	18	20
4 feet	80	88	96	104	112	120
5 feet	112½	122½	132½	142½	152½	162½
6 feet	150	162	174	186	198	210

Taking the cost of construction at 20 cents per cubic yard, a convenient formula for quickly computing the approximate cost of any embankment follows: Cost in dollars per mile=40×cross section area in square feet. (Cost will figure about two per cent high.)

Proposed levee from ~~the~~ peninsula on line between sections 1 and 2, township 26 south, range 32 east (north of lake) to the peninsula in section 25, township 26 south, range 31 east (south of lake) would be four miles long.

No profile has been made for this line. Approximate contours on maps filed at the office of State Engineer indicate that lake bed elevation along the greater part of proposed line is 4,091.0 feet.

Assuming that whatever water elevation is maintained in the Bird Reservation, that the levee should be built to provide for high water at elevation 4,094.5, and allowing 2.5 foot freeboard, the height of fill would average six feet. On the basis of a 16-foot crown, on foregoing premises this levee will cost $7,400 per mile of length.

Protection of embankment against wave action will be necessary where fill is built in open water. In dense tule growth no other protection will be required. There is a fair chance that in dredging for material that hardpan will be found in sufficient quantity to make the 3 to 1 water slope self supporting. However, as there is no certainty of this it will be well to take half the length of embankment as being in open water and estimating 50 cents per lineal foot for brush, riprap or sod protection.

Estimate of levee—Summary

Crown, 16 feet; height, 6 feet; sum of side slopes, 5 to 1; section area, 186 square feet; length of levee, 4 miles; cost of fill, 20 cents per cubic yard. (See formula on preceding page.)

4 miles of levee at $7,400	(say)	$30,000
10,000 lineal feet riprap or sod at $0.50		5,000
Structures—bridge and headgate	(est.)	5,000
Moving equipment		5,000
		45,000
Administration, engineering, and contingencies 20 per cent		9,000
Total estimate		54,000

EVAPORATION RECORDS, 1914–1921

(Monthly and total, in inches. State Experiment Station, Harney County Branch, Burns, Oregon)

Year	Apr.	May	June	July	Aug.	Sept.	Oct.	Total
1914	3. 472	6. 487	6. 647	9. 860	9. 405	5. 532	2. 651	44. 054
1915	4. 352	4. 971	7. 714	8. 820	9. 036	5. 871	3. 535	44. 269
1916	4. 632	4. 649	6. 915	8. 342	7. 383	5. 948	2. 500	40. 368
1917	1. 750	5. 226	7. 895	10. 190	8. 140	5. 527	3. 647	42. 105
1918	5. 104	7. 186	8. 611	8. 657	7. 257	4. 674	2. 385	43. 874
1919	4. 509	6. 338	8. 435	9. 801	8. 210	5. 163	2. 554	45. 500
1920	4. 252	8. 341	6. 061	8. 952	7. 968	4. 737	1. 547	41. 858
1921	3. 636	4. 471	5. 806	9. 280	8. 198	4. 676	2. 775	38. 824
8 yr. average	3. 963	6. 021	7. 260	9. 238	8. 199	5. 266	2. 698	42. 606

NOTE.—The hydrograph is to be found attached to the original exhibit.

a. 1931. In general

Mr. CHESTER W. PECORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. You have your notes. I wish you would take Defendant's Exhibit No. X–1, giving all these bench levels around the lake, and state into the record the greatest variation you found between those bench marks shown in that report, and the ones shown in your own survey.

A. The elevations varied, as might be expected, with almost each bench mark we tied in with; that is not material as there is nothing to indicate gross error.

Our elevation of the bench mark at the Narrows was .33 of a foot different than the one reported here; at the Haley ranch there are two bench marks. One is an iron rod driven flush two feet east of post with one reported elevation of old survey in 1914 of 4,095.36 feet; another reported elevation in 1922 survey of 4,095.55 feet; and our elevation of that was 4,095.268, or about .28 less than the highest elevation, the one reported in 1922. In fact, there is almost as (R. 2271) much of a difference between whoever made those two surveys in 1914 and 1922, respectively, as there is between those surveys and ours. Then there is a Ford rear axle and hub set nearly flush with the hub end down near the Haley ranch and we are .28 of a foot different than the reported elevation. (R. 2272.)

(NOTE.—At the suggestion of the Special Master, Mr. Pecore is to make a comparison of bench marks on Defendant's Exhibit No. X–1, setting out the difference in the elevations given in Defend-

ant's Exhibit No. X–1 and his survey of 1931. This comparison, when completed by Mr. Pecore, is to be marked "Defendant's Exhibit No. X–2.) (R. 2272.)

b. Establishment of bench marks

Mr. MOTT V. DODGE, called as a witness for the defendant, testified in substance as follows:

Mr. Cooper established the bench marks that are referred to in the report, marked "Defendant's Exhibit X–1." (R. 2374.)

In connection with my work for Mr. McConnell, Mr. Cooper and I had occasion to run some levels.

Shortly after we arrived here (Burns, Oreg.) quite early (R. 2375) in 1910 (R. 2372), we established a bench mark on the north side of Harney Lake, I believe at that time we also had some readings of the bench (mark) at the Narrows.

We also established a bench (mark) at the Peterson place near the mouth of the Silvies River.

We also established one (bench mark) on a bridge near the Showen house, from which we attempted to find the difference in elevation of the waters of Malheur and Harney lakes. That was really the object of the work. (R. 2375.)

Mr. R. D. COOPER, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. Now, Mr. Cooper, will you state whether or not subsequently when the Government and the State tried to work out a bird proposition together, whether at the request of the State Engineer you did any engineering work upon this lake.

A. Yes; I did.

In 1922 I have a rather comprehensive record of the water surface elevations at several points on the (Malheur) lake, and in (R. 2407) connection with the work I established a number of bench marks near the edge of that lake.

Mr. LILJEQVIST. Q. And these bench marks are given in this (Defendant's) Exhibit X–1, the original of which you have brought with you from the State Engineer's Office of Oregon, is that correct?

Let me hand it to the witness. Did you make a report to the State Engineer?

A. I did.

Q. Is that the original report you have in your hand?

A. It is.

SPECIAL MASTER. Will you admit that (Defendant's Exhibit) X–1 is a copy of that original report?

Mr. BLACKMAR. Yes; your honor. (R. 2408.)

3. Defendant's Exhibit X–2—Comparison of the bench marks

MOTT V. DODGE, called as a witness for the defendant, testified in substance as follows:

(NOTE.—At the suggestion of the Special Master, Mr. Pecore has made a comparison of bench marks on Defendant's Exhibit X–1, setting out the difference in the elevations given in Defendant's Exhibit X–1, and his survey of 1931. This comparison now completed by Mr. Pecore is marked "Defendant's Exhibit X–2.) (R. 2272.)

Mr. LILJEQVIST. Now, there has been offered in evidence since Mr. Pecore was on the stand, as Defendant's Exhibit X–2, the comparison of the bench marks established by Mr. Cooper. Now, I want you to look at them, and I want you to state, as an engineer, whether there is enough difference between those elevations to make any material difference in your judgment on (R. 2374) the question of ascertaining what is the contour line or the level of the (Malheur) lake.

A. Generally speaking, I would say not. It is possible for some very special question to come up where a difference might enter in, but as a general thing I would say not.

Q. And these bench marks that the Government used in this case and those that Mr. Cooper used are very, very close together, are they not?

A. Yes, sir. (R. 2375.)

I have examined Mr. Pecore's testimony in this case with reference to the elevations that they took at the bench marks.

Mr. LILJEQVIST. Q. Now, taking the bench mark at the Narrows that Mr. Pecore has testified about, and as used by you, will you state whether there is enough difference between those (R. 2376) two bench marks to make any material difference in the elevations as made by you and made by Mr. Pecore, as far as this question of determining where the water came in the lake is concerned?

A. I don't think so; no.

Q. I think Mr. Pecore testified to a certain figure here. We have a very small figure here [indicating on map].

SPECIAL MASTER. About four inches; three-tenths of a foot, he said.

A. Yes, sir. (R. 2376.)

Defendant's Exhibit X-2 (R. 2272) reads as follows:

MALHEUR LAKE LEVELS, 1922, IN FEET, BENCH MARKS, NORTH SIDE OF LAKE

	Elevations		
	State	Government	Difference
At Narrows, U. S. G. S. standard iron pipe bench southeast of Narrows Bridge	4, 096. 20	4, 095. 868	−. 33
Haley Ranch, east gate post two hundred feet southwest of house; old B. M. an iron rod driven flush two feet east of post:			
Old survey (1914)	4, 095. 36	4, 095. 271	−. 09
New survey (1922)	4, 095. 55	4, 095. 271	−. 28
New bench mark is a Ford rear axle and hub set nearly flush with hub end down	4, 095. 62	4, 095. 339	−. 28
Howell's oil well, three hundred feet southeast of north edge of flange of six-inch well casing, one foot or more above ground	4, 097. 66	4, 097. 536	−. 12
Graves Ranch, one hundred yards north of barn, three feet west of west gate post, bench made from galvanized iron pipe, 1½" x 42", set three feet in ground; bottom end is flanged and set in concrete; top is capped and stamped "State B. M."	4, 099. 37	4, 099. 516	+. 14
Saddle Butte, one-half mile west of, just north of old deserted house, one foot west of gate post, drag tooth driven about flush	4, 095. 12	4, 095. 336	+. 2
Saddle Butte, one mile southeast of, high gate with heavy juniper posts and cross bar, south side of east and west lane, iron rod ⅝" x 24", six inches north of west post, 0.1 feet out of ground	4, 099. 60	4, 099. 943	+. 34
Pelican Point, two miles southeast of Saddle Butte, greasewood ridge extending into lake toward Pelican Island at high gate with yoke, in east and west fence crossing point. Galvanized gas pipe, 1½" x 42", with bottom end flanged and set in concrete, top is 0.5 feet above ground, capped and stamped "State B. M."	4, 097. 90	4, 098. 236	+. 34
Narrows, two miles east of, north side of road at forks, iron rod ½" x 18", six inches southeast of corner post, 0.1 feet out of ground	4, 110. 49	4, 110. 171	−. 32
dhouse School, at gate in front of, rear axle of Ford car set hub end down, top 0.2 feet out of ground four feet east of gate	4, 097. 95	4, 097. 666	−. 28
Ed. Springer's house, at gate in front of, north side of road, ⅝" x 3" x 24" spring steel, 0.1 foot above ground near east gate post	4, 097. 53	4 097. 441	−. 08

MALHEUR LAKE LEVELS, 1922, IN FEET, BENCH MARKS, NORTH SIDE OF LAKE—con.

	Elevations		
	State	Government	Difference
Alva Springer's house (where Benson now lives), at small gate in front of, one hundred yards east of Springer's Spring, two feet east of gate post; galvanized pipe 1½" x 42" set 36" in ground in concrete; top is capped and stamped "State B. M."	4, 100. 97	4, 100. 741	−. 23
George Benson's cabin at mouth of Blitzen River; two feet north of small gate west of cabin, ⅜" x 3" spring steel 24" long, driven nearly flush	4, 096. 39	4, 096. 118	−. 27
Graves Ranch, west of West Fork of Silvies River; Gage is located about one and a quarter miles south of Graves house, in edge of lake on west side of N. & S. fence; installation consists of ¾" galvanized gas pipe fitted with auger, bored four feet into lake bed with six-foot vertical staff gage attached to pipe with U bolts:			
Zero of gage	4, 091. 02	4, 091. 159	+. 14
Top of pipe to which gage is attached	4, 097. 32	4, 097. 459	+. 14
Secondary gage at Graves' house, metal gage on post near windmill, zero of gage	4, 090. 40	4, 090. 660	+. 26

L. Other Meandered Lakes–Defendant's Exhibit No. X–3.

EVIDENCE RELATING TO

1. In General

Chester W. Pecore, called as a witness for the plaintiff, on cross-examination testified as follows:

I made an examination some three or four years ago of the amount of meandered water lake beds in the State of Oregon, but I do not know now anywhere near what it was. (R. 2281.)

(Note.—A list of meandered lakes in the State of Oregon, not connected with interstate waters or foreign waters, except Goose Lake, is to be furnished by counsel for the State, and it is to be marked "Defendant's Exhibit No. X–3." This list is to be later checked by the plaintiff herein.) (R. 2281–2282.)

A copy of Defendant's Exhibit X–3 (R. 2282) is as follows:

Lake Wappatoo	T. 2 S., R. 4 W.	Patented as swamp land.
Devil's Lake	T. 7 S., R. 11 W.	3 miles long, ¼ mile wide; meandered near Siletz Bay.

Triangle Lake	T. 16 S., R. 7 W.	About 640 acres.
Mercer Lake	T. 17 S., R. 12 W.	About 1½ miles long and ½ mile wide.
Clear Lake	T. 18 S., R. 12 W.	North of Siuslaw River; 1 mile long and ½ mile wide.
Lake Cleawose	T. 19 S., R. 12 W.	1½ miles long, from ⅛ to ⅓ mile wide.
Lake Whoahink	T. 19 S., R. 12 W.	2½ miles long and ⅛ to ¼ mile wide.
Lake Tsiltcoos	T. 19 S., R. 12 W., & T. 20 S., R. 12 W.	2½ miles wide and 3 miles long.
Lake Tahkenitch	" "	About 7 miles long and from ¼, ½, to ¾ miles wide.
Unnamed Lake	" "	About mile long and ¼ mile wide.
Unnamed Lake	T. 21 S., R. 12 W.	1½ miles long and ¼ mile wide.
Clear Lake	T. 22 S., R. 12 & 13 W.	½ mile wide and 2 miles long.
Eel Lake	T. 22 S., R. 12 W., & T. 23 S., R. 12 W.	2½ miles long and ¼ mile wide.
Loon Lake	T. 23 S., R. 10 W.	1½ miles long and ⅜ mile wide.
Unnamed Lake	T. 24 S., R. 13 W.	About 1 mile long and ⅜ mile wide.
Flores Lake	T. 31 S., R. 15 W.	1¼ miles long and ½ mile wide.
Garrison Lagoon	T. 33 S., R. 15 W.	¾ miles long and ¼ mile wide.
Crescent Lake	T. 24 S., R. 6 E.	3¾ miles long and from ¾ to 2½ miles wide.
Silver Lake	T. 25 S., R. 27 & 28	6 miles long and 4 miles wide.
Malheur Lake	T. 25 S., R. 32, 32½, 33 E.	
Harney Lake	T 26 S., R. 30 E. & T. 27 S., R. 29, 29½, 30 E.	
Malheur Lake	T. 26 S., R. 30, 31, 32, 33 E.	
Fish Lake	Only part surveyed in T. 27 S., R. 6½ E.	½ mile wide.
Silver Lake	T. 28 S., R. 15 E.	6 miles long and 4½ miles wide.
Thorn Lake	do	¾ mile in area; all dried up.
Upper Cow Creek Lake	T. 28 S., R. 44 E.	2½ miles long and ¾ mile wide.
Lower Cow Creek Lake	do	1 mile square.
Summer Lake	T. 30 S., R. 17 E.	10 miles wide and 15 miles long.
Klamath Lake	T. 30 S., R. 17 E.	4 miles long and 5 miles wide.
Mannis Lake	T. 32 S., R. 34 & 35 E.	1 mile by ¾ mile wide.

Abert Lake	T. 35 S., R. 21 & 22 E., 34 S., R. 21 & 23 E., 35 S., R. 21 E.	12 miles by 6 miles.
Warner Lake	T. 33 S., R. 26 & 27, 34 S., R. 24, 25, 26, 27 E.	15 miles long by 3 miles wide.
Klamath Lake (upper)	T. 34 S., R. 7½ E. & 7 E., 35 S., R. 7½ & 7 E.	4 miles by 2 miles.
Anderson Lake	T. 35 S., R. 24 & 25 E.	2½ by 1½ miles.
Big Klamath Lake	T. 36 S., R. 7 & 7½	20 by 6 miles.
Alvord Lake	T. 36 S., R. 33 E., 37 S., R. 33 E.	4 miles by 2 miles.
Warner Lake	T. 37 S., R. 24 & 25 E., 38 S., R. 24 & 25 E.	18 miles by 5 miles.
Unnamed Lake	T. 39 S., R. 7 E.	½ mile by ¼ mile.
Pelican Lake	T. 39 S., R. 24 E.	1¼ by ¾ miles.
Guano Lake	T. 39 S., R. 27 E.	5 miles by ¼ mile.
Tumtum Lake	T. 39 S., R. 35 E., 40 S., R. 35 E.	1¼ miles by 1 mile.
Dog Lake	T. 40 S., R. 17 E.	2 miles by ¼ mile.
Goose Lake	T. 40 S., R. 20, 21, 40 S., R. 20, 21 E.	
Waldo Lake	T. 21 S., R. 5 & 6 E., 22 S., R. 5 & 6.	5½ miles long by 3 miles wide.
Gold Lake	T. 22 S., R. 6 E.	½ mile long by ¼ mile wide.
Doris Lake	T. 22 S., R. 7 & 8 E., 23 S., R. 7 & 8 E.	3 miles long by 2 miles wide.
Unnamed Lake	T. 20 S., R. 6 E.	1½ miles by 1 mile.
Teout Lake	T. 25 S., R. 7 E.	3 miles by 1 mile.
Deer Lake	T. 20 S., R. 7 E.	1 mile by ½ mile.
Charlton Lake	T. 21 S., R. 6 E.	¾ mile by ½ mile.
Paulina Lake	T. 21 S., R. 12 E.	2 miles by 1½ miles.
East Lake	T. 21 S., R. 13 E.	2 miles by 1¼ miles.
Blue Lake	T. 13, S., R. 8 E.	½ mile long by ¼ mile.
Suttles Lake	T. 13 S., R. 8 E.	1½ miles by ½ mile.
Dark Lake	T. 13 S., R. 8 E.	¼ mile by ⅛ mile.
Clear Lake	T. 14 S., R. 7 E.	1¼ miles by ¼ mile.
Big Lake	T. 14 S., R. 7½ E.	1 mile by ¼ mile.
Olive Lake	T. 9 S., R. 34 E.	1¼ miles by ¼ mile.
Unnamed Lake	T. 1 N., R. 2 E.	1 mile by ⅜ mile.
Unnamed Lake	T. 1 N., R. 3 E.	⅛ mile wide by ¾ mile long, ⅛ mile wide by 1 mile long.
Lost Lake	T. 1 S., R. 8 E.	¼ to ½ mile wide to 1 mile long.
Sucker Lake	T. 2 S., R. 1 E.	¼ mile wide by 1¼ long.
Clear Lake	T. 4 S., R. 9 E.	½ mile wide by 1½ miles long.
Wallowa Lake	T. 3 S., R. 45 E.	¾ mile wide by 3¼ miles long.
Sturgeon Lake (part of)	T. 2 S., R. 1 W.	¼ mile long and ¼ mile wide.

Unnamed Lake	....do	¼ mile wide, nearly 1 mile long.
Sturgeon Lake	T. 3 N., R. 1 W.	4½ miles long and ¼ to 2 miles wide and branches ½ to 1 mile wide to 2 miles long.
Unnamed Lake	T. 3 N., R. 1 W.	3 miles long and ⅛ to ¼ mile wide; north mile deeded by State.
Unnamed Lake	T. 2 N., R. 1 W.	⅛ to ¼ mile wide.
Unnamed Lake	T. 5 N., R. 1 W & T. 6 N., R. 1 W	¼ mile wide and 1¾ miles long.
Unnamed Lake	T. 7 N., R. 10 W.	⅛ mile wide and 1¼ miles long.

2. Status report of Defendant's Exhibit X–3 by Mr. Joseph A. Ganong, Plaintiff's Exhibit No. 56

Subsequent to the hearings at Burns, Oreg., the plaintiff has had checked Defendant's Exhibit No. X–3 by furnishing a copy thereof to Mr. Joseph A. Ganong, Cadastral Engineer, Portland, Oreg., and by stipulation between respective counsel his report thereon is made a part of the record and has marked Plaintiff's Exhibit No. 56.

PLAINTIFF'S EXHIBIT No. 56

I, Joseph A. Ganong, office cadastral engineer for Oregon, do hereby certify that the following named and unnamed bodies of water, commonly known as lakes, and so definitely described by township and range with approximate length and width that they may readily be identified by reference to the official plats of the survey of said townships, were meandered at the time the official surveys of those townships were made and they are exhibited as meandered lakes upon the official plats:

Lake	Tp. and Rg.	Approximate size
Devils Lake	T. 7 S., R. 11 W.	3 mi. long, ¼ mi. wide.
Triangle Lake	T. 16 S., R. 7 W.	About 640 acres.
Mercer Lake	T. 17 S., R. 12 W.	About 1½ mi. long, ½ mi. wide.
Clear Lake	T. 18 S., R. 12 W.	1 mi. long, ½ mi. wide.
Lake Cleawox	T. 19 S., R. 12 W.	1½ mi. long, ⅛ to ½ mi. wide.
Lake Whoahink	T. 19 S., R. 12 W.	2½ mi. long, ½ to ¾ mi. wide.
Lake Tsiltcoos	Tps. 19 & 20 S., R. 12 W.	2½ mi. wide, 3 mi. long.
Lake Tahkenitch	T. 20 S., R. 12 W.	7 mi. long, ¼ to ⅝ mi. wide.
Unnamed Lake	T. 20 S., R. 12 W.	Mile long, ¼ mi. wide.
" "	T. 21 S., R. 12 W.	1½ mi. long, ¼ mi. wide.
Clear Lake	Tps. 29 S., Rs. 12 & 13 W.	2 mi. long, ½ mi. wide.

Lake	Tp. and Rg.	Approximate size
Eel Lake	Tps. 22 & 23 S., R. 12 W.	2½ mi. long, ¼ mi. wide.
Loon Lake	T. 23 S., R. 10 W.	1½ mi. long, ⅜ mi. wide.
Unnamed Lake	T. 24 S., R. 13 W.	1 mi. long, ⅜ mi. wide.
Flores Lake	T. 31 S., R. 15 W.	1¼ mi. long, ½ mi. wide.
Garrison Lagoon	T. 33 S., R. 15 W.	¾ mi. long, ¼ to ⅜ mi. wide.
Crescent Lake	T. 24 S., R. 6 E.	3¾ mi. long, ¾ to 2½ wide.
Silver Lake	Tps. 25 S., Rs. 27 & 28 E.	6 mi. long, 4 mi. wide.
Fish Lake	T. 27 S., R. 6½ E.	¾ mi. wide, meandered through sec. 13, extends into unsurveyed land.
Silver Lake	T. 28 S., R. 15 E.	6 mi. long, 4½ mi. wide.
Thorn Lake	T. 28 S., R. 15 E.	¾ mi. in area.
Upper Cow Creek Lake.	T. 28 S., R. 44 E.	2½ mi. long, ¼ mi. wide.
Lower Cow Creek Lake.	T. 28 S., R. 44 E.	1 mile square.
Summer Lake	T. 30 S., R. 17 E.	10 mi. wide, 15 mi. long.
Manns Lake	T. 32 S., R. 35 E.	1 mi. by ¾ mile.
Abert Lake	Tps. 33, 34, & 35 S., Rs. 21, 22, & 23 E.	12 miles by 6 miles.
Klamath Lake	Tps. 34 & 35 S., Rs. 7 & 7½ E.	4 miles by 2 miles.
Anderson Lake	Tps. 35 S., Rs. 24 & 25 E.	2½ mi. by 1½ miles.
Klamath Lake	Tps. 36 S., Rs. 7 & 7½ E.	20 mi. by 6 miles.
Alvord Lake	Tps. 36 & 37 S., R. 33 E.	4 miles by 2 miles.
Warner Lake	Tps. 37 & 38 S., Rs. 24 & 25 E.	18 miles by 5 miles.
Unnamed Lake	T. 39 S., R. 7 E.	½ mi. by ¼ mi.
Pelican Lake	T. 39 S., R. 24 E.	1¼ mi. by ¾ mile.
Guano Lake	T. 39 S., R. 27 E.	5 mi. by ¾ mile.
Tumtum Lake	Tps. 39 & 40 S., R. 35 E.	1¼ mi. by 1 mile.
Dog Lake	T. 40 S., R. 17 E.	2 miles by ¼ mile.
Goose Lake	Tps. 40 S., Rs. 19 & 20 E.	5½ mi. by 3 miles.
Waldo Lake	Tps. 21 & 22 S., R. 6 E.	5½ mi. by 3 miles.
Gold Lake	T. 22 S., R. 6 E.	½ mile by ¼ mile.
Davis Lake	Tps. 22 & 23 S., Rs. 7 & 8 E.	3 miles by 2 miles.
Unnamed Lake	T. 20 S., R. 6 E.	1½ mile by 1 mile.
Deer Lake	T. 20 S., R. 7 E.	1 mile by ½ mile.
Charlton Lake	T. 21 S., R. 6 E.	¾ mile by ½ mile.
Paulina Lake	T. 21 S., R. 12 E.	2 mi. by 1½ mile.
East Lake	T. 21 S., R. 13 E.	2 miles by 1¼ miles.
Blue Lake	T. 13 S., R. 8 E.	½ mile by ¼ mile.
Suttles Lake	T. 13 S., R. 8 E.	1½ miles by ½ mile.
Dark Lake	T. 13 S., R. 8 E.	¼ mile by ¼ mile.
Clear Lake	T. 14 S., R. 7 E.	1¼ miles by ¼ mile.
Big Lake	T. 14 S., R. 7½ E.	1 mile by ¼ mile.
Olive Lake	T. 9 S., R. 34 E.	1¼ mile by ¼ mile.
Unnamed Lake	T. 1 N., R. 2 E.	1 mile by ⅜ mile.

Lake	Tp. and Rg.	Approximate size
Unnamed Lake (2)	T. 1 N., R. 3 E.	⅛ mi. by ¾ mile. ⅜ mi. by 1 mile.
Lost Lake	T. 1 S., R. 8 E.	⅜ mile by 1 mile.
Sucker Lake	T. 2 S., R. 1 E.	¼ mile by 1¾ miles.
Wallowa Lake	T. 3 S., R. 45 E.	¾ mile by 3¼ miles.
Sturgeon Lake	T. 3 N., R. 1 W.	4¼ mi. by ¾ to 2 mi.
Unnamed Lake	T. 3 N., R. 1 W.	3 miles by ⅛ to ¾ mi.
Unnamed Lake	T. 2 N., R. 1 W.	⅛ to ¾ mi. wide.
Unnamed Lake	Tps. 5 & 6 N., R. 1 W.	¾ mi. by 1¾ mi.
Unnamed Lake	T. 7 N., R. 10 W.	⅜ mi. by 1¾ miles.
Warner Lake	Tps. 34 S., Rs. 24, 25, & 26 E.	Numerous bodies of water meandered as Warner Lake.
Harney and Malheur Lakes.	Tps. 26 & 27 S., R. 29 E. T. 27 S., R. 29½ E. T. 28 S., R. 29½ E. T. 26 S., Rs. 30 & 31 E., north of lake.	Extensive water area shown on plats.

I further certify the records of this office indicate the following described lakes not meandered:

Lake	Tp. and Rg.	Approximate size
Silver Lake	Tps. 26 S., Rs. 27 & 28 E.	6 miles by 4 miles. Survey extended over lake.
Klamath Lake	T. 30 S., R. 17 E.	4 mi. by 5 mi. Non-existant, can not identify by this description.
Manns Lake	T. 32 S., R. 34 E.	1 mi. by ¾ mi.
Guano Lake	T. 40 S., R. 27 E.	5 mi. by ¾ mi.
Waldo Lake	Tps. 21 & 22 S., R. 5 E.	5½ mi. by 3 mi. Townships unsurveyed.
Johnson or Ten Mile and North Lakes.	T. 23 S., R. 12 W.	Many miles in extent; surveys projected across, not meandered.
Teout Lake	T. 25 S., R. 7 E.	3 mi. by 1 mi. Not shown on plat.
Clear Lake	T. 4 S., R. 9 E.	½ mi. by 1½ mi. Survey extended over.
Sturgeon Lake	T. 2 S., R. 1 W.	¾ mi. by ¾ mi. Neither indicated upon official plat.
Unnamed Lake	T. 2 S., R. 1 W.	¾ mi. by 1 mi. Neither indicated upon official plat.
Warner Lake	T. 34 S., R. 27 E.	About 800 acres not meandered, surveys projected over.

I furthermore certify the records of this office indicate that the following described lakes were meandered and the surveys subsequently extended so as to cover additional lands, erroneously, fraudulently, or otherwise omitted from the original survey:

Lake	Twp. and Rg.	Approximate size
Lake Tsiltcoos	Tps. 19 & 20 S., R. 12 W.	2½ mi. by 3 mi.; survey extended in T. 19 S., R. 12 W.
Lake Wappatoo	T. 2 S., R. 4 W.	Meandered, then returned as surveyed by protraction.
Silver Lake	T. 28 S., R. 15 E.	6 mi. by 4½ mi.; meander line run northerly through western portion of township; subsequently large area added by extension of survey.
Klamath Lake	Tps. 34 & 35 S., Rs. 7 & 7½ E.	4 mi. by 2 mi.; additional surveys.
Goose Lake	Tps. 40 & 41 S., R. 19 E.	Large lake; extensive areas added by additional surveys.
Goose Lake	Tps. 39 & 40 S., R. 20 E.	Large lake; very extensive areas added by additional surveys.
Warner Lake	T. 33 S., Rs. 26 & 27 E.	15 mi. by 3 mi. Meandered; subsequent survey extended over lake in entirety, covering approximately 7500 acres.
Warner Lake	Tps. 35, 36, 37, 38 & 39 S., R. 25 E. Tps. 36, 37, 38, 39 & 40 S., R. 24 E.	Extensive lake, meandered through each township. Surveys subsequently extended adding large areas. Second meander line established in each township.
Harney & Malheur	T. 26 S., R. 30 E., south of lake. T. 27 S., R. 30 E. Tps. 26 S., Rs. 31 & 32 E., south of lake. T. 26 S., R. 32 E., north of lake. Tps. 25 & 27 S., R. 32 E., and Tps. 25 & 26 S., R. 33 E.	Large water area shown on official plats. Lakes meandered through each township, surveys subsequently extended and second meander line run, adding large areas as surveyed lands.

In testimony whereof, I have hereunto set my hand and affixed the seal of this office at Portland, Oregon, this the twelfth day of January, 1932.

JOSEPH A. GANONG. (Signed).
Office Cadastral Engineer for Oregon.

[OFFICIAL SEAL.]

3. Description in general by Stanley G. Jewett

Mr. STANLEY J. HUGHET, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Mr. Jewett, I hand you herewith the Department of the Interior U. S. Geological Survey map of the State of Oregon, to assist you in the matters as to which I desire to interrogate you. With reference to Defendant's Exhibit X–3, the list of the meandered lakes in Oregon. (R. 2349.)

To avoid repetition, what I am trying to get at is: In any of these lakes I inquire about, is there any possibility of taking merchandise or trade and travel from these lakes into another State, or into a foreign country, and if so, I wish you would say so (R. 2350); otherwise, we will assume that it can not be done (R. 2351).

SPECIAL MASTER. Mr. Liljeqvist, is that the only point we are seeking to establish in reference to the list of the lakes?

Mr. LILJEQVIST. I want to show their depth, your honor.

I might explain to your honor this: If I understand the Government's contention in this case, or the case of the *United States* against *Holt State Bank*, it apparently is, unless a lake is navigable within the rules stated in that case, Oregon did not acquire title upon admission into the Union. Now, I am taking issue with that position of the Government, and claim that the *United States* against *Holt Bank case* never decided such a thing, and that that position is contrary to the overwhelming weight of all prior decisions of the United States Supreme Court and of the (R. 2351) Federal courts, and I want to establish, your honor, the far reaching consequences, not only to Oregon—particularly as to Oregon—but incidentally as to all States in the Union, of any such interpretation of the *United States* versus *Holt Bank case* (R. 2351).

SPECIAL MASTER. Wouldn't it expedite the matter if he took that list and familiarized himself with it? (R. 2353.)

Mr. LILJEQVIST. I have gone over it with him, your honor.

Thereupon Mr. Stanley G. Jewett, as a witness for the defendant, testified with regard to the lakes listed on Defendant's Exhibit X–3, and situated within the State of Oregon, as follows:

Devil's Lake—T. 7 S., R. 11 W.

I am familiar with that lake. It is what we generally term as a brackish lake, just east of the immediate coast line of the ocean.

Devil's Lake is of moderate depth from—roughly I would say 6 to 10 or 12 feet deep, surrounded by heavy timber and a more or less bordered growth of tules, and other swamp vegetation. It is about three miles long and a quarter of a mile wide. (R. 2349.) It is not possible to go from that lake in any boat or vessel of any kind into the Pacific Ocean, into foreign commerce, or into another State. (R. 2350.)

Triangle Lake—T. 16 S., R. 7 W.

Triangle Lake is about 21 or 22 miles west of Eugene in Lane County, Oregon. It is several miles in circumference, and a fairly round lake, and deep enough so that you can not see the bottom from shore. I would not say as to the depth of Triangle Lake, it is a moderately deep lake. There is no possibility there of using it for commercial purposes unless it would be floating logs from shore to shore. You can not float logs out of that lake into the Pacific Ocean or into any navigable stream. (R. 2350.)

Mercer Lake—T. 17 S., R. 12 W.

It is a deep lake.

Clear Lake—T. 18 S., R. 12 W.

(Mr. LILJEQVIST. It is near the Siuslaw River.)
That is a moderately deep lake.

Lake Tsiltcoos—Tps. 19 and 20, S., R. 12 W.

About half of the lake is deep, and the other half shallow with vegetation.

A great number of people from all over the State of Oregon, and particularly Portland, come down to hunt and fish on this lake. (R. 2352.)

This lake, like Lake Tahkenitch, is one of the biggest recreational lakes for hunting and fishing in the State of Oregon, west of the Cascades. (R. 2352–2353.)

I could not give the depth in feet of Lakes Tahkenitch and Tsiltcoos. They are deep lakes as lakes go, but whether they are 20 or 30 feet deep, I would not say; in that neighborhood; very much over a man's head; they would take boats of considerable size. (R. 2353.)

Lake Tahkenitch—Tps. 19 and 20, S., R. 12 W.

That is slightly shallower than Tsiltcoos.

A great number of people from all over the State of Oregon, particularly Portland, come down to hunt and fish on this lake. (R. 2352.)

This lake, like Lake Tsiltcoos, is one of the biggest recreational lakes for hunting and fishing in the State of Oregon, west of the Cascades. (R. 2352–2353.)

I could not give the depth in feet of Lakes Tsiltcoos and Tahkenitch. They are deep lakes, as lakes go, but whether they are 20 or 30 feet deep, I would not say; in that neighborhood; very much over a man's head; they would take boats of considerable size. (R. 2363.)

Unnamed lake—Tps. 19 and 20 S., R. 12 W.

There are several small lakes there of moderate depth that I know. They are all very similar in appearance and in depth. (R. 2353.)

Unnamed lake—T. 21 S., R. 12 W.

(Mr. LILJEQVIST. It is off toward the coast.)

I do not know that lake. (R. 2353.) There are several unnamed lakes, some near the coast, that I have been to, but I could not identify this unnamed lake. (R. 2354.)

Flores Lake—T. 31 S., R. 15 W.

I know Flores Lake. A hotel is maintained there, and camping grounds too, and the proprietors rent boats to people who wish to hunt and fish on that lake.

The depth of that lake I would say was from eight feet, near shore, to 20 or 30 feet out toward the center.

Garrison Lagoon—T. 33 S., R. 15 W.

Garrison Lagoon is shallower and probably fifty per cent of the area of the lake supports a growth of vegetation.

Crescent Lake—T. 24 S., R. 6 E.

This is a deep mountain lake in Klamath County.

Silver Lake—T. 25 S., Rgs. 27 and 28 E.

This lake is dry. When I first knew it, it was a large body of shallow water, similar to Harney Lake, but smaller. It was six miles long and four miles wide. (R. 2354.)

In the early days, I would say it was from three to four feet deep. It is growing hay crops and other crops on it now. (R. 2355.)

Fish Lake (part only surveyed)—T. 27 S., R. 6½ E.

It is in the Cascade Mountains. It is a deep alpine lake surrounded by timber. In places it may be 50 feet deep.

Silver Lake—T. 28 S., R. 15 E.

This is the lake I have just described.

(NOTE.—He described the Silver Lake in T. 25 S., Rs. 27 and 28 E.)

Thorn Lake—T. 28 S., R. 15 E.

This is a dry, alkaline flat.

Upper Cow Creek Lake—T. 28 S., R. 44 E.

A shallow alkaline lake in Malheur County. I doubt if it is over two feet deep. (R. 2355.)

Lower Cow Creek Lake—T. 28 S., R. 44 E.

The same description as Upper Cow Creek Lake.

Summer Lake—T. 30 S., R. 17 E.

Summer Lake is one of the larger lakes in Lake County, Oregon. The waters have receded greatly in the last fifteen years, and it is now very shallow and alkaline.

With reference to its size originally, the road around the (R. 2356) west side of it was approximately 25 miles from one end of the lake to the other. In the west end of it, the lake has afforded a great ground for hunting.

For many years the State of Oregon has had leases on it for the purpose of minerals.

Klamath Lake

(Mr. Liljeqvist. T. 30 S., R. 17 E. They may have called it that in the early days, but I don't know. It is on the map so-called).

It must be 7 E. (R. 2356.)

(Note: Mr. Joseph A. Ganong, Cadastral Engineer for Oregon, states that he cannot identify this lake by this description. See second page of Plaintiff's Exhibit No. 56 and page 878 of this Abstract).

Klamath Lake—T. 36 S., Rgs. 7 and 7½ E.

This is the largest fresh-water lake in the State. Roughly the main part of the lake is 20 to 25 miles; it is very deep in parts.

Steamboats used to navigate on that lake when I first knew Klamath Lake in the early days.

Between that lake and Lower Klamath Lake is the Link River, and Lake Ewauna. Link River is not navigable in any way at all.

Lake Ewauna is an expansion of the Link River; it is probably a mile and a half in diameter; it is deep; probably 20 feet in places. (R. 2357.)

I do not know from personal experience how the public used to get to Klamath Falls, and what use they made of Lake Ewauna before the Weed railroad was built to Klamath Falls. I know the history. The boats that ran from Laird's landing and Oklahoma landing in Lower Klamath Lake went up the Klamath River and through Lake (R. 2357) Ewauna, to the town of Klamath Falls, which was forty miles away. I could not say whether passengers were charged for that haul they made.

Lake Ewauna is entirely in Oregon, and below that lake the outlet of it is the Klamath River, which runs into the ocean. Immediately below Lake Ewauna, or the landing I have described, it (the Klamath River) goes down a deep canyon, through the Cascade Mountains.

There is no possibility whatever of freight or commerce being carried by water over into California down that canyon. If it is navigable, it is navigable entirely within the State of Oregon.

There are places on the north shore of Lake Ewauna that are 18 or 20 feet deep. (R. 2358.)

Mann's Lake—T. 32 S. Rgs. 34 and 35 E.

This lake is in Harney County. It is dry now. It is just a small alkali pond as I have known it for twenty years. (R. 2358–2359.)

Albert Lake—Tps. 33, 34 and 35, S. Rgs. 21, 22 and 23 E.

I am quite familiar with that lake. It is one of the larger alkaline shallow lakes, in Lake County, Oregon. I have never seen (R. 2360) the water in it over three feet deep myself. Originally, it was 20 to 25 miles long.

Anderson Lake—T. 35 S., Rgs. 24 and 25 (in Warner Valley)

Originally it was about 2½ by 1½ miles in area, but now it is dry. Originally it was 3 or 4 feet deep at times.

Alvord Lake—Tps. 36 and 37 S., R. 33 E.

This is a dry alkaline flat just east of the Steen's Mountain in Harney County. I saw an inch or two of water on it in one spring, and it soon evaporated. (R. 2359.)

I do not know what it was in the early days when Judge Colvig wandered around there with the soldiers. (R. 2360.)

Pelican Lake—T. 39 S., R. 24 E.

It is a small circular lake in Warner Valley, which is now dry.

Warner Lake—Tps. 37 and 38 S., Rgs. 24 and 25 E.

(Mr. LILJEQVIST. What is known as Hart Lake and Crump Lake were originally called Warner Lake.) (R. 2360.)

Hart Lake is now entirely dry. Crump Lake, which is the deeper one, has a few acres of water in extent at the present time.

I have seen six feet of water measured in Hart Lake. (R. 2360.)

Guano Lake—T. 39 S., R. 27 E.

I am familiar with this lake. Guano Lake has had water in it in my experience, a number of years ago; the last time I saw it it was dry. Its depth was from maybe a foot to nothing, when it had evaporated.

Tumtum Lake—Tps. 39 and 40 S., R. 35 E.

That is in southeastern Harney County. I have never seen water in Tumtum Lake. (R. 2360.)

Dog Lake—T. 40 S., R. 17 E.

This is a lake in the Fremont National Forest, southwest of Lakeview, moderately deep, ten or twelve feet of water at times.

Goose Lake—Tps. 40 and 41 S., R. 19 E.; T. 40 S., Rgs. 19 and 20 E.; Tps. 39 and 40 S., R. 20 E.

I believe there is no water in Goose Lake in Oregon at the present time. I have known water to have been in it. I could not say how deep it has been.

(Mr. LILJEQVIST: Of course, that lake goes across the State line of Oregon and California.)

Formerly it was on the line; it used to be right on the boundary. You could haul ducks and geese across the line if the warden didn't catch you. (R. 2361.)

Waldo Lake—Tps. 21 and 22 S., R. 5 E.; Tps. 21 and 22 S., R. 6 E.

That is a deep lake in the summit of the Cascade Mountains. It is in either Klamath or Douglas Counties, I am not sure which; a rather deep alpine lake. (R. 2361.)

Paulina Lake—T. 21 S., R. 12 E.

It is in Newberry Crater in the Deschutes National Forest, a very deep alpine lake. (R. 2361-2362.)

East Lake—T. 21 S., R. 13 E.

It is a deeper lake than the Paulina Lake. It is in the same general vicinity as the Paulina Lake; I never measured the depth;

it is one of the deep lakes of the Cascade Range. When I say deep, I mean anywhere from 15 to 25 feet.

Blue Lake—T. 13 S., R. 8 E.

I have seen Blue Lake; it is a small body of water, and had a greater altitude than Suttles Lake, and I believe it is in Deschutes County.

Suttles Lake—T. 13 S., R. 8 E.

This lake is one of the larger Cascade lakes; a moderately deep lake, 15 to 18 feet of water. (R. 2362.)

Clear Lake—T. 14 S., R. 7 E.

There are areas in Clear Lake, in the Cascade Mountains, that are very deep, possibly 30 to 35 feet.

Olive Lake—T. 9 S., R. 34 E.

Originally this was a lake from eight to ten feet deep, but in later years, it was dammed, and the water level raised considerably. (R. 2362.)

Lost Lake—T. 1 S., R. 8 E.

(Mr. LILJEQVIST: Near Portland.)

Lost Lake is a summer resort lake in the Cascades, near Mount Hood. I do not know the depth, but it is over a man's head. (R. 2362–2363.)

Sucker Lake—T. 2 S., R. 1 E.

This lake is in Multnomah County; it is an overflow slough bordering on the Columbia River.

Clear Lake—T. 4 S., R. 9 E.

I do not know that Clear Lake.

Wallowa Lake—T. 3 S., R. 45 E.

The largest lake in the northeasthern part of the State, in Wallowa County. It is a deep lake, but I would not say how deep. (R. 2363.)

It is what is called a glacial formation, and it is dammed up at the lower end of the valley, forming a very big lake. Glacial moraine is formed at its lower end, and it is full of what is known as Yanks (land-locked salmon). From my knowledge of my profession, I know that geologists claim that those Yanks came up the Columbia River and the Snake River into the Wallowa Lake in prehistorical days before the ice melted and formed this terminal glacial moraine at the foot of the lake. (R. 2363.)

That is a very deep lake, and there is very fine fish in Wallowa Lake.

It is the leading recreational area in the northwest.

Sturgeon Lake—T. 3 N., R. 1 W.

This is a shallow overflow lake on Sauvies Island in the Columbia River near Portland.

Since Chief Multnomah's time when Lewis and Clark were there that lake has been one wherein innumerable hunters have hunted, and have had private hunting reserves in there. It is the greatest hunting place around Portland. Depending entirely on the flow of the Columbia River, there was probably 20 feet of water over Sturgeon and Sucker Lake at times. In the winter the average depth is just a few feet.

Sturgeon Lake—T. 2 N., R. 1 W.

That is another overflow lake on Sauvies Island; it is used for hunting and fishing. (R. 2364.)

Mr. Liljeqvist. Q. The rest (of the lakes on the list, Defendant's Exhibit X–3) are the unnamed lakes.

A. Yes.

Q. These (the lakes described) are all lakes, as I understand, that trade and commerce could not be carried on in the usual way that trade and commerce is carried on by water from these particular lakes into any other State, Territory, or foreign country, or between the Government and the Indian tribes?

A. It could not.

Mr. Blackmar. I think you ought to include in your question "or susceptible of navigation."

Special Master. Or susceptible.

Mr. Liljeqvist. I am talking about your theory of the Federal test of navigability. (R. 2365.)

M. Malheur Slough

EVIDENCE RELATING TO

1. Water conditions

a. In the early days

Mr. Lee Minis Caldwell, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In the early days the water used to back up all the time to the Marlin Bridge across Malheur Slough on the road to Crane. (R. 161.)

Mr. FRANK WHITING, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

The greatest trouble we had on the lower road was for a mile or so out from Malheur Slough east towards Windy Point. Part of that water that wet that up may or may not have come down Malheur Slough. Malheur Slough had quite a deep channel there. I have never seen the water over the banks of Malheur Slough. (R. 209–210.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The water was so deep in Malheur Slough that I had to swim my horse, and that was back water of Malheur Lake. (R. 284.)

Mr. CLARENCE THOMAS CAREY, called as a witness for the plaintiff, testified in substance as follows:

During the run-off Malheur Slough got to be quite a stream of water going down there. The water came down from the uplands through this slough into the lake. (R. 762.)

Cross-examination:

My place was located about 1900 where Malheur Slough entered the lake.

(NOTE.—Malheur Slough as it enters the lake spreads out, and it doesn't have a definite channel, but it comes down through section 10, T. 25 south, R. 33 east, and spreads all over the country down there.—Pecore. R. 766.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Nine Mile Slough is on the east side of the lake, near Saddle Butte; I think it is the same thing as the Malheur Slough. (R. 1380–1381.)

The Malheur Slough is very much of a barometer as to the height of the lake. (R. 1380.) It is an important factor of the water supply. There are some very heavy streams that come in there on the east side (of Malheur Lake).

The melting snow that stood on the valley floor went through the Nine Mile (Malheur) Slough into the lake. Malheur Lake backed up into the slough water.

In those early days we went to Malheur Slough to camp; that was one of our camping places; we used to drink that water and camp there two or three days as that was the kind of a place for starting to work the cattle, and work around on the east side (of Malheur Lake). That old camping place was probably a mile or a mile and a half below what was the Government bridge. The Government has a bridge across it for the road leading to Happy and Diamond Valleys. I think that bridge is still in existence, but maybe it has been moved up some. I think it is a little down toward Saddle

Butte, about half a mile, not more than a mile below the old county bridge.

Mr. PECORE. I think what they refer to as the county bridge (R. 1382) is just right in here [indicating on Plaintiff's Exhibit 3]. The old town of Lawen stood in here [indicating], and there is a bridge across Malheur Slough where it crosses right here [indicating]; not the present bridge on the Crane-Burns Highway, but on the old Lawen-Crane Highway. The bridge is right in there. It is very close to the northeast corner of section 18, T. 25 S., R. 33 E., north of the lake. That is a bridge on the old county road that ran from the old town of Saddle Butte which was located right in here [indicating] (R. 1382); and it was located just about on the north section line of section 18, and about in the middle of the north boundary of the section, running east to Crane, and the bridge, as nearly as I can remember, is just about on the corner of sections 7, 8, 17, and 18, T. 25 S., R. 33 E. His bridge would be on down here [indicating].

Mr. LILJEQVIST. Q. And your bridge would be about how far below that, Mr. Hanley?

A. Well, in my mind that is rather a long bridge. I would rather think this Government bridge was north of that—north of that particular bridge.

Q. Then where did the water of the lake go to at that Government bridge?

A. Well, the backwater in that slough, in the fall of 1880, the backwater there was fully three feet deep.

Q. And that meant the level of the lake was the same height?

A. That was the water level; yes. (R. 1383.)

Q. As you got away from 1880 and 1881, and with reference to the high-water years after that, I want you to tell your observations about any year after that, as to where the water came around that Government bridge when the lake stood up in that Malheur Slough?

A. Well, I think that the water was just about as high in 1893 and 1894—the spring of 1894 in that slough as it was when I seen it in 1880.

Q. Now, between 1880 and 1894, what have you seen as to the (R. 1383) different years?

A. Well, I would have to go along with each year, because every one of them will be a little bit different story.

I would have to check on that; there are many of those years that I did not see that particular point.

In the years that I did see it, the water backed up the slough to that point. That same year I came back from southern Oregon; I had been down in southern Oregon; I had stayed with my father and mother; and this particular year, 1893, I came back, and 1894 was the winter that flooded, and the lake and the country was pretty well watered before that winter; that was another one of those rainy winters, the water flowed all winter, for two months anyhow, and

then the big flood came in the spring, but those are the years that made the big impression of water in the lake. (R. 1384.)

I think for several years prior to the last 15 years that the waters in the springtime backed up from the (Malheur) lake in Malheur Slough to that point. (R. 1385.)

Mr. LILJEQVIST. Q. This Government bridge that you refer to on Nine Mile Slough, is that where the twin bridges used to be?

A. That was in the settlement time of the eighties, when they had twin bridges. At that time one bridge was a pretty rare thing.

Q. Were the twin bridges subsequently located in the approximate vicinity of this old Government bridge you have testified about?

A. I would imagine they were, because that old road (R. 1392) leading out from it south has never been changed much. (R. 1393.)

Mr. MARION HORTON, called as a witness for the plaintiff, testified in substance as follows:

I have passed by Malheur Slough several times. I have seen its banks overflowed, but not very far from the banks.

Mr. BLACKMAR. Q. Do you know from what place the Slough got its water?

A. Well, there are several sloughs. There is one up there—the Nine Mile Slough; I suppose it is apparently the same Slough; I could not say. (R. 1470.)

It was overflow that came from Cow Creek, or towards Harney, somewhere up there. I think it came in that direction. I never followed the Slough the whole length, so I could not say.

The movement of the water in the (Malheur) Slough was towards the (Malheur) lake; Malheur Slough had sloping banks. When it was full, I should judge it might be six feet deep; may be deeper.

At the time I saw the (Malheur) Slough, most of it was deep enough to confine the water which flooded down through it. (R. 1471.)

Mr. JOHN W. BIGGS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Malheur Slough—doesn't that drain a considerable area?

A. That drains an area that used to be very considerable. Now, there was Rattlesnake Creek and Cow Creek and Rock Creek, and three or four other smaller creeks that would come down and spread all over the northeast part of the valley here, in which there would be thousands of acres under water there. Then they would collect down below into the Malheur Slough, and that would run on into the east end of Malheur Lake.

Q. Is there anybody at all in all the engineers that have been here that made any measurement of that amount of water which flowed into the lake through Malheur Slough?

A. I never heard of any measurements.

Q. And it is only in comparatively recent years that measurements have been made?

A. I don't know. Personally I know of no measurements ever having been made on the Malheur Slough. (R. 1503.)

Mr. ORIN EUGENE THOMPSON, called as a witness for the plaintiff, on redirect examination, testified in substance as follows:

Malheur Slough is quite a ways north of my place; I should judge it is eight or nine miles, but I have seen it a good many times, and I have had occasion to observe the waters in the spring of the year around that slough.

I have seen it when it was about bank full, and other times not so much; some years when we used to get plenty of water in the (R. 1515) valley, quite a bit of water covered part. I have not seen the water spread out along the banks. After it gets so full in that lake it backs up. There doesn't seem to be no channel; that is, there is no current. It just seems to be standing water.

The slough is tolerably deep, in some places you could swim a horse when bank full. By reason of it being deep, it (the slough) is able to take care of those waters.

Recross-examination:

I do not know hardly whether you would call the (Malheur) lake backing up in there (Malheur Slough) or (whether) it ran in until the lake was level and it stopped.

Mr. LILJEQVIST. Q. When the water stopped it was, as you would judge, the level of the lake? Would you think so?

A. It seems as though it would be; yes. (R. 1516.)

I am sure I could not say as to how far back the water stopped from Malheur Lake. (R. 1516–1517.)

Mr. LILJEQVIST. Q. And how high would the water be within the banks of Malheur Slough when the water was stopped? How far *below the banks*?

A. I could not say. The banks varied. In some places they are deeper than others. I could not say how deep it would be.

I knew where the old bridges were up there; I have seen it (the water) stopped up as far as the highway goes through from Burns to Crane now—up to the bridges.

I have seen the slough full from there clear to the (Malheur) lake and water to the banks. There did not seem to be so much current in it. The water below the banks of the slough varied; sometimes it was full and sometimes it wasn't.

Mr. LILJEQVIST. Q. I mean up where you saw it as far as the bridges on the road between here and Crane, where it stopped flowing. Was it up to the banks of the slough?

A. Well, sometimes it was, and other times it wasn't.

Q. Did that happen very frequently?

A. No; I don't think so. (R. 1517.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

I am well acquainted with Malheur Slough.

Mr. LILJEQVIST. Q. Did the water back that Slough up and still it, or stop it flowing in the springtime?

A. I don't ever remember of seeing the water back up that Slough until the banks were full and stop. The upper bridges, what they call the twin bridges, I have crossed cattle in the spring of the year when water was running south in the (Malheur) lake, when they had the bridge stacked with wires, every corner, to keep it from washing out. (R. 1717.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

Mr. LILJEQVIST. Q. Well, during the years you were there up until you left the country, what is the fact about the water backing up into Malheur Slough until the water was perfectly quiet?

A. I never saw water that I would say backed up from the (Malheur) lake to Malheur Slough; I have seen the Slough full of water, but I think it all came from the creeks, from Cow Creek and Crow Camp and Rattlesnake (Creek) and Poison Creek; all those creeks filled the slough. (R. 1804.)

N. COOPER-DODGE SURVEY, 1913–1914, OF MALHEUR LAKE, ON ICE; ALSO DODGE SURVEYS OF 1916 AND 1931

EVIDENCE RELATING TO

1. Bench mark at narrows

Mr. CHESTER W. PECORE, called as a witness for the defendant, testified in substance as follows:

The difference between the elevation at the State bench mark at the Narrows given by Mr. Dodge and my elevation (at the same point) is 3.3 feet, or .332. (R. 2490.)

2. Methods of Survey

a. Closing Survey

Mr. MOTT V. DODGE, recalled as a witness for the defendant, on cross-examination testified in substance as follows:

Mr. BLACKMAR. Q. Mr. Dodge, on these elevations that you have given us of the water down there, did you ever close the lines?

A. Some of them; part of them.

Q. Well, which ones? Did you close that one that you took there on the ice? Was that line ever closed?

A. Yes, sir; that is, the Peterson place bench mark at the Peterson log barn was closed.

Q. Well, that doesn't give you as accurate a line as if you had closed the entire line, does it?

A. It gives as accurate a line for that particular bench as though you had gone on around it. My point is this: It makes no difference whether you run a line up to a certain bench and run that line back, or run it a second time, or whether you go around a circle and come back to the point of beginning (R. 2480), if you know what I mean.

Q. What I mean is, you ran it up and back?

A. Yes. I did not run it around a circle and close it. A line that is run around the circle and closed is not to my knowledge considered the most accurate in engineering.

Mr. BLACKMAR. Q. If you simply run it up and back, all you do is sort of check it, isn't it?

A. Well, you have two separate lines of levels.

Q. You do not think you get a more accurate line when you run it around a circle and tie it in that way? (R. 2481.)

A. I don't think so; no. In fact, I believe it is the general procedure of precise level to run one way and check it back.

SPECIAL MASTER. That may be practically accurate, Mr. Dodge, but I suppose if you start from a bench mark and go through 40 others and come back and it closes, you have made assurance double sure?

A. Possibly.

I did not close the line with the bench mark at the Narrows, (R. 2481) and the way I left it it naturally gives rise to some percentage of error. (R. 2481–2482.)

Mr. BLACKMAR. Q. How much allowance did you make for the ice?

A. The elevations were not taken on the ice. A hole was cut in the ice, and the water surface, where it rose to, was the point we took the elevation of.

I did not make any calculations for the rise in the water which might be caused by the pressure of the ice.

Mr. BLACKMAR. Q. In running levels upon ice, isn't it customary to take the surface of the ice, and then correct the amount of the expansion of the water by freezing?

A. We didn't run any levels on the ice.

Q. Well, in determining the elevation of the water surface, isn't it customary to use the ice surface, and then correct, so that you take into consideration the expansion of the water by reason of the ice forming?

A. Possibly, but we did not go to that much refinement in this work. Theoretically, I suppose, when a body of water freezes, the surface of the ice is always above the surface of the water. If you take the surface of the water, and then the ice melts, the addition of that melting water would probably raise the surface of the water slightly.

I came from Iowa where they do a lot of skating. (R. 2482–2483.)

Mr. BLACKMAR. Q. Haven't you seen time and again where you cut holes in the ice, frequently the weight of the ice caused a flooding of the rest of the pond?

A. I never thought that was the cause of the flooding.

Q. Well, isn't it a fact that the reason you cut the hole in the ice in order to flood it and to get a smooth surface, is because the pressure of the ice on the water causes the water to rise in the hole and spread?

A. That has not been my experience, Mr. Blackmar.

I have never flooded ice for the purpose of smoothing it out for skating. I have seen water flow over ice frequently, especially in a stream.

Mr. BLACKMAR. Q. Haven't you seen holes cut in a lake and time and again hasn't the water risen above that and flooded all the immediate surface?

A. I don't recall that I ever have. I will say this, however, that in the survey which we made of Malheur Lake, I have no recollection of that ever happening at any time. As a matter of fact, in every instance I think the water was slightly below the surface of the ice after the hole was cut.

SPECIAL MASTER. Mr. Dodge, was the elevation of the surface of the ice the elevation which you found for the water (R. 2483), plus the thickness of the ice?

A. I don't quite get that, your honor. (R. 2484.)

(Question read by the reporter.)

A. No, no; that would not be true, because you take a block of ice and let it float free, it always floats with just a small percentage of it out of the water. That is, it almost sinks. There is just a little bit above.

SPECIAL MASTER. Supposing I employed you to ascertain the elevation of the surface of the ice, and you had found the elevation of the water surface as you did, would you add the thickness of the ice and say that was the elevation of the surface of the ice?

A. No, sir; I would not. I would add a small percentage of that thickness.

SPECIAL MASTER. Of course, if you had a client whose interest would be a higher water level, he would justly complain, would he not, that you had taken as the elevation the surface of the water, and made no addition for the fact that ice was superimposed?

A. That is true.

Mr. LILJEQVIST. As a matter of fact, the client's interest was to have as little water in there as possible, and to drain it.

SPECIAL MASTER. I was just asking those questions to show that that could not be a fair universal rule. It might be quite desirable for those clients who wanted a low water (R. 2484) level, but those who wanted a higher water level, it would not be fair to them, and therefore it is not universally fair. It may make no difference in this case, but it would not be universally fair. (R. 2485.)

Redirect examination:

Mr. LILJEQVIST. Q. Was the ice thick enough so that it did not bend when you went over it and stood on it?

A. In places it bent a great deal; in fact, it bent clear through in some places. (R. 2485.)

Mr. CHESTER W. PECORE, called as a witness for the defendant, testified in substance as follows:

I have heard the testimony of Mr. Dodge with reference to the methods he used in making the survey (of Malheur Lake in the winter of 1913–1914). As to the methods employed, I do not believe any agency of the Government will accept any survey (R. 2490) either vertical or horizontal, as final, until it has been closed. The reason is, it has been demonstrated to the satisfaction of the Government by experience of having hundreds of parties in the field over a long period of years, that a survey cannot be depended upon until it is closed, because the possibility of mistakes by the most careful instrument men and rodmen is so great. The Government has learned to its sorrow that it cannot depend on anything except the closed survey. According to the requirements of the three branches of the Government, in service with which I am familiar, that is the Coast & Geodetic Survey, the Biological Survey, and the General Land Office, the method of closing the survey obtains. As far as my own experience is concerned, I would never depend on one of my own surveys until it had closed, and I think that is the recognized view of the engineering profession generally.

Sometimes a surveyor could be accurate if he did not close, but he cannot be sure that he is accurate unless he does close. The only difference between our surveys is that I know what my error is down there (at the State bench mark at the Narrows) and Mr. Cooper and Mr. Dodge did not (R. 2492) know what their error was. Their error may be less than mine. I have forgotten whether their high-water mark is above or below, but there is only four inches difference. (R. 2491–2492.)

Mr. R. D. COOPER, recalled as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. I want you to give your views as an engineer in this matter (of closing a survey).

A. I will only detain you one moment as regards your 'phoning, but I don't want to be left in the air here looking like an ignoramus in the way of methods. I have had some little mathematics of my own, and I understand quite a lot of the things that go with good instrument work. I understand refraction, and I understand that the earth is spherical, approximately. I have had those corrections to take into account, and I have run closed circuits time and again, and I know exactly the value of the closed circuit, and I know the

doubts attached to an unchecked line, and so does Mr. Dodge. In all of our work down here that we considered that it was necessary to get especially close work, our lines were doubled at one time or another. In nearly all cases the work was gone over. It might be a year or two apart that these lines would be run, but there would be two lines between points as a rule. Once or twice we depended upon the level of the open water to (R. 2493) check the closure, and that is an approximate check, although I would say I would not take open water for a real, critical check, on account of the possibility of the wind influence. I do not believe it is necessary to go any further on this. I never had known before it was necessary to run the line in a circle. It is usually better to run the line, if you are going to double the line itself, to run one way and back; that is better than to run the same line twice in the same direction.

SPECIAL MASTER. Well, the point is that sometimes an employer does not want to go to the expense of closing in, and a competent engineer will tell him, "Well, I will double back on it, and if you want to take your chances, you can." Now, doesn't that happen?

A. It always happens, certainly it happens, lots of times.

SPECIAL MASTER. They do that with lawyers, and I suppose they do that with engineers. They want to be just reasonably safe or reasonably approximate, although not absolutely sure.

Mr. BLACKMAR. Your honor, it is very refreshing to find that some of the other professions do not agree, just the same as the law doesn't.

SPECIAL MASTER. Yes.

The WITNESS. I don't think there is any special disagreement. Mathematics is mathematics, no matter who it is for. (R. 2494.)

3. Description of 1913–1914 Survey

Mr. MOTT V. DODGE, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. What work did you do with reference to finding the water level on Malheur Lake?

A. In the winter of 1913–1914 Mr. Cooper and myself made a survey of Malheur Lake on the ice under the direct supervision, or at the request of Mr. Garfield Stubblefield, a Portland engineer at that time, but whose present position I believe is with the Water Resources Branch of the State of California. (R. 2377.)

We made a check up with the State bench mark down at the Narrows (R. 2375) in the winter of 1913–1914. (R. 2376.)

At that time at Mr. Garfield Stubblefield's request (R. 2377) we proceeded to Malheur Lake and made a survey by soundings of the bottom of Malheur Lake, working on the ice, working on skates; and in pursuance of that work we established a temporary bench mark near the east end of Malheur Lake, and took the difference in elevation between that bench mark and the water as it rose in a hole cut in the ice, and went ahead and made our soundings through the ice, read-

ing the water level rather than the ice level until we had covered the lake. Then, from a gage which had been previously established at the Peterson place, which I believe I have already mentioned, we took another reading, and found the difference between that bench mark and the water level as it rose in the ice. A little later, in February, we ran a line of levels from the Narrows to the bench mark at the court house in Burns. And in this circuit we ran a line over to the bench mark at the Peterson place, and from this work we computed the elevation of the bench at the eastern end of Malheur Lake, using the water surface as a means of making that computation.

The bench mark at the court house at Burns, Oregon, was the United States Geological Survey (bench mark).

That bench mark at Peterson's (R. 2378) is that cabin, that log granary that has been mentioned in this case a number of times, south of the Showen place.

Mr. LILJEQVIST. That is the house, your honor, that shows about a mile south of the Showen place, in Lot 1, of Section 31, Township 25 south, Range 32½ East, north of the lake.

I do not believe Mr. Pecore has got any bench mark at that place. That bench mark was tied up with the bench mark at the Narrows, and with the bench mark at the point of the Pelican Peninsula. I believe that is all.

Mr. LILJEQVIST. Q. Now, in the line of levels—will you state whether or not you formed a station 6,102 feet—give me the reading of that, will you? It is in the reverse order here. Where did you establish a station at the westerly end of your line?

A. Well, the westerly end of our line, from the westerly end of our line, the section corner between Sections 7, 8, 17, and 18, Township 26 South, Range 31 East, north of Malheur Lake (R. 2379) bears north 4 degrees and 33 minutes west a distance of 6,102 feet.

I do not believe we took the elevation of that place with reference to our bench marks. That was a tie in order to map the work; to tie it to the land lines.

Mr. LILJEQVIST. Q. You ran a line then to what place on the eastern side of the lakes?

A. The beginning of our base line was on the section line between Sections 10 and 11, north of the quarter corner between the said Sections, 197 feet, and the line was straight between these two described points:

In running that line we tied it into our bench mark or marks as I have described; at the easterly end of the Malheur Lake we established a bench mark and found the difference between this bench and the water level of Malheur Lake.

Later on in the survey we did the same thing in respect to the bench mark at the Peterson place.

Mr. LILJEQVIST. Q. The Government in this case has taken a reading at 4,093. Can you tell me in your survey what your comparable reading would be to that elevation?

A. The lake level as we found it at that time, at the time we made this survey in February, 1914, was 4,094.6, according to our elevations. That reduced, the Government elevations would be practically 4,094.3. (R. 2380.)

In other words, we were substantially about four inches higher than the Government's elevation, and that is tying it into the Government's elevation, and the reading Mr. Pecore has made of the bench mark down at the Narrows.

Mr. LILJEQVIST. Q. He has the U. S. bench mark 4,095.868 at the Narrows. Yours was substantially four inches above that.

A. Our elevation and the elevation we used was 4,096.20.

SPECIAL MASTER. That difference was .332.

A. Yes.

Q. Just a little under a third.

A. Yes, sir.

Then to get the Government bench mark with reference to our work you would take .332, as the distance below our line to get the corresponding Government line.

Mr. LILJEQVIST. Q. Now, what did you do when you got to those two points that you have described in the east side and the west side of the lake with reference to running this line, and where did you start?

A. We started at the easterly end of the lake, using a flag set on Windy Point, as one end of our base line, and Iron Mountain (R. 2381) some 25 or 30 miles distant, determining the other end of the line. That is, this base line was a straight line drawn between the two described points, and this line where it intersected the section line between 10 and 11 was 1,097 feet north of the quarter corner as I have previously described, and this same line corresponded with the other description I have read for the other end of the line.

We ran that base line.

We took the actual water level of the (Malheur) lake, at intervals of about 1,200 feet in the base line, and at intervals of approximately two miles we ran cross lines at right angles to the base out to the edge of the water, where we could reach it. There were two or three instances in which we ran across open water or tules so dense we did not go clear out, but with those exceptions we went clear to the edge of the water. (R. 2382.)

Mr. HARRY Z. SMITH, called as a witness for the defendant, testified in substance as follows:

I was with Mr. Cooper and Mr. Dodge when they did some engineering work out on the ice of Malheur Lake (in the winter of 1913–1914). I do not believe I can tell you the year (R. 2401); I did not pay much attention, just working, you know. I was head chain man.

With reference to (Mr. Dodge and Mr. Cooper) getting the elevation of Malheur Lake. As to the elevation of the lake, I think

we started in at Malheur Lake and came this way and checked back to town here. I believe that is the way we did it. You know, it was either that job, or another job; I could not say for sure.

Mr. LILJEQVIST. Q. When you got down on that lake itself, how did they determine the water of the lake?

Mr. BLACKMAR. If the court please, the Government is willing to accept Mr. Dodge's explanation as to how he ran these levels and elevations.

SPECIAL MASTER. Is that sufficient for your purpose?

Mr. LILJEQVIST. That is sufficient.

Q. One thing more. I want you to tell the court whether or not you saw Cole Island, when you were doing this work, sticking above the ice?

A. I don't remember Cole Island. I remember Pelican Island, but I don't remember Cole Island.

Q. Now, have I ever talked to you in your life, Mr. Smith?

A. I believe I sold you some gas and some oil, that is all.

SPECIAL MASTER. Well, you had that advantage. (R. 2402.)

Mr. LILJEQVIST. Q. Did I ever talk to you about this case in my life?

A. No. (R. 2402.)

I do not believe I know where Cole Island is. I know where Pelican Island is, and I know where Dunn Island is, where Mrs. Martha Dunn used to live.

Mr. LILJEQVIST. Q. Out northeasterly of there is a place on this map (Plaintiff's Exhibit 3), an elevation which is called Cole Island, out toward a tower. This is Pelican Island on this map (indicating).

A. I don't believe I remember seeing it. (R. 2403.)

Cross-examination:

Mr. BLACKMAR. Q. You have never talked to me either, have you?

A. No.

Q. You never even sold me oil or gas?

A. No. (R. 2403.)

Mr. R. D. COOPER, called as a witness for the defendant, testified in substance as follows:

I remember doing some work on Malheur Lake (in the winter of 1913–1914) with reference to running a line of levels with Mr. Dodge. I am not sure that Mr. McConnell employed us to do that particular work in which the levels were involved. We did some work for Mr. McConnell at two or three different times. The work that was done in connection with the blue print (Defendant's Exhibit X–6) that was exhibited a short time ago was not primarily under Mr. McConnell's orders.

As I recall it, suggestion was made to Mr. Dodge and myself by Garfield Stubblefield, who was then or had been in the Government

service, Reclamation Service, I believe. I understood at the time that the work was for the Government possibly, but I had no specific knowledge that was the case. I had not any great amount of interest in exactly who the work was for, as long as we knew what we were to get, and we proceeded with the survey. (R. 2405.) I believe our work found its way into a Government office in Portland in which Mr. E. G. Hopson held some official position, but what I do not know.

With reference to describing what I did in making that survey. I do not believe that I can add anything to the explanation of the work that you already have. I was on the party and assisted in about all the different parts of the work. Levels—I did most of the instrument work myself. Mr. Dodge and Mr. Smith, who have just been on the witness stand, were on the party at the same time.

With reference to the method of taking the levels on Malheur Lake (at that time). We made a preliminary reference of the water level to some close near-by bench mark and relaid it—and correlated those elevations later, the final relation going to the (United States) Geological Survey bench mark near the Narrows Bridge at the west end of the (Malheur) lake.

Mr. BLACKMAR. If you want to ask him if that survey was made in the manner and form described by Mr. Dodge, we won't dispute it. I will say for the Government that we are willing to accept the testimony of this witness that the survey was performed in the manner and the form as previously described (R. 2406) by Mr. Dodge.

Mr. LILJEQVIST. All right.

Q. Now, will you state whether or not the measurements of the water and of the mud, which you projected upon this map, Defendant's Exhibit X–6, are the actual true measurements of the depth of the water, and the depth of the water and the mud?

A. They correctly represent the depth of the water, and the depth of the water and the mud.

I do not remember the exact dates that that survey was made. As I recall, it was in the winter of 1913–1914, and it was made on the ice as Mr. Dodge has testified.

We took our levels of the lake water by taking the elevation of the water surface as related to the bench mark at the Narrows Bridge. (R. 2407.)

Mr. LILJEQVIST. Q. In 1914 did you see Cole Island that winter when you were making these measurements?

A. I don't remember anything about Cole Island, but there are several other things in connection with details on that lake survey I would not remember. I remember the main portion of our work, but I don't remember Cole Island. (R. 2417.)

Mr. C. B. MCCONNELL, called as a witness for the defendant, testified in substance as follows:

With reference to my connection with the survey made in January and February, 1914, by Mr. Cooper and Mr. Dodge down on the

(Malheur) lake, it was in connection with the general reclamation projects that were being investigated and worked out at that time, commencing in 1910 and continuing on up to the organization of the Irrigation District here in 1919.

I was personally present on several occasions while that work was being done down on the (Malheur) lake.

I know where they took the water levels at (Malheur) lake and in what way. The survey was made on the ice surface of the (Malheur) lake from the outer edges. A base line was run east and west from Windy Point to a site on Iron Mountain, and soundings were made along that base line at intervals usually about the same distance (R. 2418) apart, and then other cross lines were run north and south at fixed distances, and soundings were made along those lines. A hole was punctured in the ice by a flag pole, and the elevation was given by first reading where the white pole stuck—stationary. And then it was put down to a solid bottom, and another elevation read and reported to the man at the instrument.

SPECIAL MASTER. Now, everything you know to be done was done in an approved way, is that right?

A. Yes.

SPECIAL MASTER. And everything of which you had no direct and immediate knowledge yourself you believe to have been done in an approved way by Mr. Cooper and Mr. Dodge and Mr. Smith, or whoever else was there?

A. I do; yes, sir. (R. 2419.)

The water levels were taken from the actual level of the (Malheur) lake.

On that trip I do not remember seeing Cole Island sticking above the ice. I was present soon after the commencement of the work near Windy Point while they were working east of Pelican Island. Then I was present on two or three occasions when they were west of Pelican Island. I remember of being at the west border of Pelican Island, and my recollection is that it was open water clear through to the tule growth directly opposite the mouth of the Blitzen River. There were tules along the margins there. I know that there was just a big immense stretch (R. 2419) of ice, clear ice there that I do not remember any obstruction in.

The thickness of the ice in that survey varied. I think about four to six or eight inches, around there. In some places it was very shallow. I know we remarked how it stood up on just a two or three inch thickness. (R. 2420.)

Cross-examination:

I have hunted around the lakes.

Cole Island has been known to me for a good many years.

Mr. BLACKMAR. Q. The fact of the matter is, everybody in this community has recognized it as a permanent island, haven't they?

A. Why, it is referred to as Cole Island. I don't know whether it is a permanent island. There is a strip of land that is known as Cole Island.

It is not an island. There are times in the year there would be a number of projections above the water. They would be cut off in places.

Mr. BLACKMAR. Q. But Cole Island, according to your information, has a definite location in that lake?

A. Yes. (R. 2420.)

Q. And so known in this community?

A. Yes. (R. 2421.)

Redirect examination:

Mr. LILJEQVIST. Q. Are you stating at springtime, when the waters are in there in the spring, that Cole Island is not entirely under water, or is above water?

A. Why, it depends entirely on the height of the water.

SPECIAL MASTER. There could be water high enough?

A. There could be water high enough; yes.

Mr. LILJEQVIST. Q. From your knowledge of that country, was the height of the water in the springtime higher than when you were out there on the ice?

A. Yes; after the run-off. (R. 2421.)

STATE OF OREGON

OFFICE OF THE CLERK OF THE STATE LAND BOARD

I, G. G. BROWN, clerk of the State land board of the State of Oregon, and custodian of records and seal of such board, do hereby certify that I have examined the records of minutes of the State Land Board and find nothing to show any official action regarding the application of C. B. McConnell filed June 21, 1913, to reclaim Malheur Lake.

In testimony whereof, I have hereunto set my hand and affixed hereunto the seal of the said board. Done at the capitol, at Salem, Oregon, this 9th day of April, 1932.

(Signed) G. G. BROWN,
Clerk of the State Land Board.

[SEAL.]

4. *Defendant's Exhibit X–6—map or plat of 1913–1914 survey, with certain explanations*

Mr. MOTT V. DODGE, called as a witness for the defendant, testified in substance as follows:

The survey of Malheur Lake which I made with Mr. Cooper in the winter of 1913–1914, at the request of Mr. Garfield Stubblefield (R. 2377), was reduced to a plat (R. 2382), and that plat is Defendant's Exhibit X–6.

With reference to the base line that has been placed on that plat (Defendant's Exhibit X–6), the figures as found on that map represent two things: They are in pairs in each instance; taking for instance, the second figure after you enter the (Malheur) lake it is marked 1.5–2.0, which means that the depth of the water was 1.5, and the combined depth of the water and mud was 2 feet.

The way that measurement was made was this: A hole was cut in the ice and a rod was put down very gently until it reached the bottom, and a reading made where the water came on the rod, and the rod was pushed down firmly, and read a second time. That system of cutting a hole in the ice is the way we did it all through that entire line.

The first figures give the depth of the water (R. 2383) and the second figure the depth of the water and mud. They are all fractions of a foot, for instance, four decimal eight (4.8) means four and eight-tenths feet of water. That is the way all of those figures are indicated, and on the legend here there is a note to that effect.

Mr. LILJEQVIST. Q. All right. Now, will you state, Mr. Dodge, if that was actually the true depth of the water, and the true depth of the water and the mud as made by an actual survey on the ground from the water level at that time?

A. Yes.

After all this data was reduced to a map, we drew these contour lines as nearly as we could from the data which we had as representing lines of equal elevation on the bottom. Of course, with the exception of the points right where the readings were taken there was more or less estimation in the (R. 2384) drawing of those contours, but at the points where the elevations were taken, we were positive of the depths.

We found the exact points where we have put those figures which read from north to south on the map, by scaling the same as any other map is made.

Mr. LILJEQVIST. Q. When you did it on the ground how did you do it?

A. We actually measured the distance with a chain and cut a hole in the ice at that point and made the soundings.

Q. On this map, Defendant's Exhibit X–6, is a broken line indicating (R. 2385) edge of tules. Now, what I am asking you is, within that broken line toward the center of the lake, what was there?

A. Open water, as depicted on the map.

To the north of that broken line, called the edge of the tules, there were tules more or less dense, depending on the location. We did not attempt to make a very accurate determination of this. This is just an approximation.

We did not try to measure out the channels through the tules or things of that kind; we did not note any difference as to whether the tules were very thick or whether they were scattering. We have indi-

cated on the map the way the country looked with reference to that vegetation.

Mr. LILJEQVIST. Q. I notice to the eastern side of this broken line you have the words "scattering tules." Just describe how they looked to you.

A. There were just occasional bunches of tules in there; it was not as much as we have to the north or south of this dotted line, or as dense as we found to the west. It was just what it says, just scattering bunches of small tules.

Q. Now, Mr. Dodge, I have had Mr. Pecore mark on Plaintiff's Exhibit 3 these beginning points and a line projected across in red, a red dot with a circle around it, and a straight line projected to those two points. State whether or not it (R. 2386) would go across Cole Island where it now is?

A. Yes, sir; it would.

Q. And in running this base line that shows on Defendant's Exhibit X–6 did you go across what has been referred to in this case as Cole Island.

A. We must have.

Q. I want you to tell the Court whether, at that time when you proceeded out onto the ice and did this work, any of Cole Island was visible above the ice?

A. We didn't notice it.

Q. If it had been there would you have placed it upon your map?

A. We certainly would. That is what we were making the survey for, to get the physical facts.

We have placed Pelican Island and two other islands in its vicinity (on the map, Defendant's Exhibit X–6). (R. 2387.)

Mr. BLACKMAR. One other island in that vicinity is Cole Island, isn't it?

Mr. LILJEQVIST. That is way to the east. That is southwest of Pelican Island.

Q. Now, through the western part of this (Malheur) lake that has been referred to in this case as west of a line drawn from the mouth of the Blitzen (River) to the west fork of the Silvies (River), on the north, where you have marked "thick tules," did you do the same thing with reference to these measurements?

A. Yes, sir.

We found the ice there (R. 2387) and the water there, and we have marked the same thing.

On the base line is to be found "69.4, plus 80 on the ridge north of the cabin," and that, just as it shows there, was on a ridge. I would not state positively whose cabin that was, but I think it is what has been mentioned in this case as the Hill cabin, or owned at the present time by Mr. Huffman. 69.4, plus 80 means 69,480 feet from the point of beginning.

Mr. LILJEQVIST. Q. Now, at the line on the base line where it strikes the first contour line which is marked three decimal naught, will you state what the depth of the water was at that place?

A. Well, by my interpolation, it was three feet. We have a reading east of this one-foot contour; I am speaking about where the three-foot contour cuts the base line at the westerly end of the map; east of this contour we have a depth of 3.5, and a little bit west of that contour we have an elevation of 2.9, and the location of this line where it crosses the base is determined by interpolating between these two figures. (R. 2388.)

I have no memorandum in my possession to tell the exact dates that we did that work. I do not know whether Mr. Cooper has (one) or not. But as I remember, the work took us about three or four weeks, and we finished I think along about the fourteenth of February (1914). (R. 2388–2389.) It took three or four weeks, in January and February, and it wound up sometime in February. It was frozen weather all that time; it was a pretty cold winter, although we did find numerous open channels in the lake.

We ran across those channels in numerous places. I know we had quite a little trouble in getting across there. We would come to an open channel, and we would have to skate up or down this channel quite some distance sometimes before we could find a place narrow enough so that we could jump, and we did not always jump it. We found some of those places where the third cross line that is run (on the map, Defendant's Exhibit X–6), numbering from the easterly end of the (Malheur) lake; as we attempted to go north we ran into an open channel which we could not cross. At that point the depth of the water is marked here as 3.6, and the depth (R. 2389) and mud as 4.5, and the words (open water) are written there as a reason why we did not continue this line.

Mr. LILJEQVIST. Q. Between this point 3.6—4.5, found by the words "open water," did you find open water between that and this island south of Pelican Island?

A. Yes, there were channels in there; yes.

We found open water near the mouth of the Blitzen River. The line running to the south at right angles from the base (R. 2390) toward the mouth of the Blitzen (River), we had to discontinue because we came to open water and we could not continue it.

Mr. LILJEQVIST. Q. Now, on the north side of this Defendant's Exhibit X–6, immediately below the projection, where the Figure 27 is, Township 25 South, Range 32½ East, north of the lake, there is an "0–0"; to the left of it is 1.0. Will you explain what that is?

A. Well, the naught point naught occurring on the line which was run northerly at right angles to the base is the point where we came to the land, where the ice quit.

Q. And to the west of that you found water a foot deep, as shown on the line?

A. No, this Figure 1 you refer to near—oh, about an (R. 2390) inch and a quarter south of the Figure 28 on the map (Defendant's Exhibit X–6) here, is simply showing that this line drawn through here is the line of one foot depth. The same as you use a figure in a contour map.

We made no attempt whatever to go out to the edge of the (Neal) meander line, or to follow it. What we were trying to do at that time was to get a rough idea of the bottom of Malheur Lake, the depth of the water and the relative bottom elevation.

Mr. LILJEQVIST. Q. Was the proposed project of reclaiming it and draining it involved?

A. I presume so, but we did not know at that time. I do not know that we knew what we were making it for. We were just making it under instructions. (R. 2391.)

Q. And you placed upon this map what you found, did you?

A. Yes, sir.

Mr. LILJEQVIST. I think that is all at the present time on that map. (R. 2391.)

Cross-examination:

Defendant's Exhibit X–6 was not laid out on some stock form of map that they have around here. We got those from the Government Land Office, which was here at that time, and those outside lines (on Defendant's Exhibit X–6) we took from the Government plats around the (Malheur) lake. We did not run those outside lines. We got those from the Government map.

We do not show any islands over there at all in the west end of the (Malheur) lake. (R. 2396.)

Mr. BLACKMAR. Q. Was it practically dry over there at that time? (R. 2396.)

A. No, sir. (R. 2396–2397.)

I do not think there were any people living in there (Malheur Lake) at that time. I do not recall any of those old settlers in there at that time with their cattle. I did not visit any of them, and I did not see anyone living in there at that time; I do not believe there was (anyone).

There was snow on the ground (when that work was done).

Mr. BLACKMAR. Q. And it would make it pretty difficult to see all parts of this lake, wouldn't it?

A. As I recall it, there wasn't but very little finish snow on the ice. The reason I make that statement is because the skating was pretty good, and if there was much snow on it we could not have skated very well.

Q. Let me ask you this. You do not say there were not islands in there, in the western portion (of Malheur Lake) there? (R. 2397.)

A. There were, but they were too numerous to put on this map, and therefore we didn't make any attempt to put them on at all.

We did not use a plane table out there at Pelican Island.

Mr. BLACKMAR. Q. You just sketched that (on the map, Defendant's Exhibit X–6) from notes you had in your book (R. 2397), or from other maps?

A. At a distance from the base we did. Where the base line crossed the island you will find it quite accurate, but out a ways

from that I would not vouch for the accuracy of the contour of that island.

The small island which is shown to the east of Pelican Island was tule at that time; pretty heavy tule.

Mr. BLACKMAR. Q. Taking this line you have, running across the lake here from point to point, can you look at it and tell me the approximate point at which that line crossed Cole Island?

A. Well, I could tell better from your Exhibit (Plaintiff's Exhibit 3) than I could from this, because we didn't find that island in this survey.

Q. Now, on that map Cole Island seems to run up there from Section 28, Township 26 South, Range 32 East. Where is that on your map?

SPECIAL MASTER. That is to say, on Plaintiff's Exhibit 3.

Mr. BLACKMAR. Yes.

Q. Now, where is that on your map?

A. Where is section 28 on our map?

Q. Yes.

A. That is it. [Indicating.]

Q. Is that it right there? [Indicating.] (R. 2398.)

A. Yes, that is the same place. [Indicating.]

Q. Now, running up north from that in your line of soundings there, do you see anything immediately north of that which (R. 2398) would indicate any depths which you took going over Cole Island?

A. I have looked at this map (Defendant's Exhibit X–6) considerably with that in view, and I am of the opinion that that ridge, which is known as Cole Island, must have occurred between two of our readings, and we did not get a reading on it at all. That is my opinion.

Our readings were taken at 1,200 feet, unless there was some reason for taking them at some other distance. A few of them were taken at a greater distance, and some at a less distance; but as a general thing they were 1,200 feet apart.

Mr. BLACKMAR. Mr. Pecore, in connection with Mr. Dodge's cross-examination, give me the approximate width of Cole Island on the line to which we have been referring on Defendant's Exhibit No. X–6.

Mr. PECORE. Do you want his north and south line, or east and west?

Mr. BLACKMAR. On his east and west line.

Mr. PECORE. It would be about 18 chains, which is about 1,100 feet. 20 chains would be 1,320 feet. Two chains (R. 2399) would be 132 off of that. 18 chains would be nearly 1,200 (feet), at 66⅔.

Mr. BLACKMAR. It is barely possible in taking these soundings you hit on the west, and also hit on the east, and missed the (Cole) Island?

A. That is the only explanation I can find for it. (R. 2400.)

The WITNESS. In taking that distance across there, may I ask Mr. Pecore a question?

SPECIAL MASTER. Yes.

The WITNESS. In taking that distance across there, Mr. Pecore, what contour did you measure between?

Mr. PECORE. Probably the 92's (4,092)—93's (4,093).

The WITNESS. Between the 92's (4,092).

Mr. PECORE. Yes.

The WITNESS. Supposing you took it between the 93's (4,093), what would be the distance across?

Mr. PECORE. About six chains; approximately 400 feet.

The WITNESS. Well, that could very easily happen.

Mr. BLACKMAR. Q. And in going through there at that time of the year, at certain times of the day, if it was late in the evening, you might even miss the sight of Cole Island up toward the north and toward the south?

A. I don't think so, Mr. Blackmar. (R. 2400.)

Mr. BLACKMAR. Now, in connection with Mr. Dodge's testimony, will you give me the height of Cole Island, Mr. Pecore?

Mr. PECORE. On the west, the ninety-foot contour is what might be termed the base of Cole Island, and the top of it is above 4,095 feet. It doesn't get up to 4,096 (feet), but it gets above 4,095 (feet). (R. 2401.)

Recalled for defendant, direct-examination:

Mr. LILJEQVIST. Q. Mr. Dodge, I don't know whether I asked you what the elevation was of the water in the open part of the (Malheur) lake, or through that line of levels that you ran. Can you tell me? (R. 2474.)

A. Do you refer to the elevation of the water surface?

Q. The water itself, not the ice surface; the water surface as you cut the holes in the ice.

A. In the Defendant's Exhibit X-6?

Q. Yes.

A. The elevation of the water as determined from the line of levels ran from the Narrows to the Peterson place and tied to the line of levels that also extended to Burns at the time that elevation of this bench at the Narrows was established, was 4,094.60 (R. 2475.)

Mr. R. D. COOPER, recalled as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. Mr. Cooper, I asked you this afternoon, before you had a chance to examine your papers or records, if you knew what was the elevation at the Narrows, or what figure you used for the elevation of the water at Malheur Lake when you made this survey that you testified to. Will you give (R. 2485) me the elevation that you found the water in that lake was?

A. In 1914, I believe it was?

Q. Yes.

A. And with reference to the blue print on which the depth and soundings were given?

Q. Yes; that is Defendant's Exhibit X-6, the blue print.

A. The water surface in Malheur Lake at that time was 4,094.6.

Q. This elevation of the lake, where did you find those elevations?

A. I think the elevation that I gave is up along the north side of the lake, either at the Peterson place or Haley's. I could not say exactly right now, but I believe—I am not sure that it was the Narrows elevation.

That is the elevation of the water level that I found throughout these cuts that I made in the ice. (R. 2486.)

The elevation at the Peterson place is correlated to the Narrows; it refers to the same data. It is on the basis that has already been mentioned a number of times, considering the Government bench mark at the Narrows bridge as being 4,096.20, I believe it is. It is a number that has been in the record time and again. (R. 2487.) The level that I got is based upon that particular bench mark.

Mr. LILJEQVIST. Q. Now, Mr. Cooper, I want to ask you to explain to the Court why, if at all, you considered that you had the true elevation of the lake? State it in your own way.

A. Because we determined the elevation of the water surface as levels are usually taken by rod readings and the use of a spirit level, and related that elevation to the elevation of the bench mark in the usual manner of running the levels, and we used the water surface. In case there was ice, we cut the ice, as has been testified to before, and took the water surface and made absolutely no correction whatsoever for ice, considering so far as I am concerned, that we had a perfectly good reason for not making any correction for ice.

Q. What is that reason?

A. As Mr. Dodge testified, there would be but very little ice thickness above the surface of the water. The two (R. 2487) elevations would be very close together, especially in cases where the ice was only a very few inches thick. And I regarded the ice proposition the same as I would a block of ice floating in a body of water with part of the ice projecting above the surface. In case the ice were to melt, I think it would not change the elevation of the surface of the lake any to speak of, because of the fact that all of the ice that projects above the water is due simply to the difference in the specific gravity of the ice and the water, and when the ice is melted it would exactly fill the space that it displaced at the time that it was frozen. (R. 2488.)

Q. Did you notice any evidence of Mr. Blackmar's thin ice in Kansas, of the water coming through the hole and flooding the ice on top, or what did you find?

A. I don't recall that particular detail. As a rule when we were on ice that was that thin we went right on down through, and we became interested immediately on getting out.

You will notice there is indicated on this map (Defendant's Exhibit X-6) some open water.

Mr. LILJEQVIST. Q. Do you remember whether your measurements did take the free open water where even ice wasn't frozen as a part of your reading?

A. Yes; if we could get to it and get a reading on it, it was the free open water.

Q. Now, Mr. Dodge has testified to certain elevations of the lake at certain dates and times. Do you remember (R. 2488) personally of ever having been with him when those readings were taken?

A. I remember being with him on a number of occasions at different and quite various dates. I don't recall any specific incident, nor any one particular measurement.

Q. And at that time did you and Mr. Dodge attempt to find the true elevation of the lake?

A. We always attempted to find the true elevation of the lake if that is what our notes referred to.

Q. Now, Mr. Cooper, assuming that there is a difference between the Government's figures and your figures of .332, the Government being that distance below your elevation, do you figure in the result that you obtained and platted that there is any appreciable difference, anything in that difference between you and the Government's figures in this case that could affect the ultimate question of how far the water rose in that lake?

A. Very little. The difference between our data isn't anything surprising whatever, and it is of small consequence as I would regard it, and of very little import in connection with the question as a whole. (R. 2489.)

5. Survey of 1931, Defendant's Exhibit X-7—Report of elevations at different points, with explanations

Mr. MOTT V. DODGE, called as a witness for the defendant, testified in substance as follows:

Mr. LILJEQVIST. Q. Now, Mr. Dodge, will you state whether or not you ever attempted to take elevations with reference to this bench mark at the Narrows with reference to various points on the lake and around the lake?

A. Yes.

Q. Have you your memoranda with you?

A. Yes, sir.

Q. Now, will you state what places you took the elevations of, and what the elevations were; and with reference to what?

A. Well, in all instances the elevations taken were on the datum which makes the bench mark at the Narrows 4,096.2.

SPECIAL MASTER. Have you a number of those now reduced to writing?

A. Yes, sir.

SPECIAL MASTER. I suggest that you introduce that as an exhibit and we will have it then.

Mr. LILJEQVIST. You have reduced that to the form of a report to me, have you?

A. I have.

Q. And these elevations you have placed in this letter?

A. I have.

Mr. LILJEQVIST. We submit it to counsel, and offer it in evidence. (R. 2392.)

(Thereupon Mr. Liljeqvist hands document to Mr. Blackmar.)

Mr. BLACKMAR. Is that all that is in the letter, the elevations? (R. 2392.)

Mr. LILJEQVIST. Yes.

(Off the record.)

SPECIAL MASTER. There are six sheets there, are there not, Mr. Liljeqvist?

Mr. LILJEQVIST. This is something that I don't think covers this thing.

A. I don't think there is anything else given in there.

SPECIAL MASTER. Very well.

Mr. LILJEQVIST. There are six sheets, your honor. (R. 2393.)

Mr. LILJEQVIST. This is a letter of the elevations at different points, addressed by Mr. Dodge to myself, dated February 1st, 1931.

SPECIAL MASTER. Mr. Blackmar, did you desire to see this?

Mr. BLACKMAR. Yes; let me read that over, and you go right ahead with your examination, Mr. Liljeqvist.

SPECIAL MASTER. It will be admitted into evidence as Defendant's Exhibit X–7.

Mr. LILJEQVIST. That is a report on elevations he found around the lake.

Mr. BLACKMAR. There is a lot more besides that.

Mr. LILJEQVIST. Whatever is in it, I will give the different items.

(Thereupon the said document was by the reporter marked Defendant's Exhibit X–7.) (R. 2393.)

Mr. LILJEQVIST. Now, to reduce those points you have there described to Mr. Pecore's elevations, you take .332 off from your indicated heights, do you, or elevations?

A. That is substantially what it amounts to. I would suggest, to make it a little bit more simple, just deduct an even three-tenths; that is close enough. The reason I say that is the extreme of the two benches; that is, the one at Pelican Point and the one at the Narrows, both checked about the same. There are places in between that it is different from that to some extent, but if you deduct three-tenths from those elevations you are reasonably close.

SPECIAL MASTER. We had a witness this morning that (stated it) was less than one-eighth of a foot. (R. 2394.)

A. Yes, there are some differences, but if you deduct three-tenths, that is pretty close.

Mr. LILJEQVIST. Q. Do you think this error Mr. Pecore testified to, and which it is required to prorate between the north and south

meanders would help to account for the difference between your bench mark and his?

A. I think not. I think probably the difference, if it can be accounted for is between the difference in the datum from the two bench marks from which we started.

Q. Now, this time you did this work, from your knowledge of that lake, I want you to state whether or not that particular period when you took these measurements was the drier part of (R. 2394) the year or the average part of the year, or the wet part of the year? What is the fact, as you know it?

A. I would say that February of the average year, the water in Malheur Lake would be about at its minimum.

Q. Then, in your judgment, in the spring when the waters are poured into that lake, they would raise it above these elevations you have given me?

A. Yes, sir. I might qualify that slightly. Of course, there are some years when we have a January thaw, in which there might be some water, some spring water already in the lake at this season of the year, but this particular part of the year this was not true.

I have a fair recollection as to what kind of a year 1913–1914 was.

Mr. LILJEQVIST. Now, we will connect this up when Mr. Jessup (R. 2395) goes on the witness stand.

Q. Do you know when Mr. Jessup's measurements of determining area start, in what period of the year, and they ended what period of the year? Do you know how engineers commonly compute that?

A. I do not know as there is any set rule for that; no.

Mr. LILJEQVIST. I think I had better get Mr. Jessup's report, and then I wish to continue this as to the analysis based on the facts which Mr. Jessup will produce here afterwards. I am unable to follow this out as I desire to do, because (R. 2395) Mr. Jessup's report is not in yet. (R. 2396.)

Defendant's Exhibit X–7 reads as follows:

BURNS, OREGON,
Feb. 1, 1931.

Mr. L. A. LILJEQVIST,
Marshfield, Oregon.

DEAR SIR:

Following instructions contained in your letter of Jan. 19 to me and also your letter to Mr. Charles E. Strickland, State Engineer, attention Mr. Cooper, under date of Jan. 8th, I have proceeded to Malheur Lake and have procured all the data which you requested except in two instances. I do not quite understand what is meant by the "Foot of Mrs. Martha Dunn's land extending into Malheur Lake." I am also in doubt as to just what place the R. H. Smyth place is. If these two points are important please tell me a little more definitely just what is wanted and I think I can get the data

quickly and cheaply. If at all convenient I would suggest that you give the description of points wanted by legal description.

In my last letter to you I told you I had found a man who was at the Sand Reef just before and just after it broke through and that I intended to take him down and have him point out to me just where the water stood before it broke through. Having received no word from you I assume this would meet with your approval and yesterday I took Mr. Lee Caldwell down to the Sand Gap and also to Windy Point and got his ideas as to just where the water stood at both places and as to the location of the old government road at the point. Mr. Caldwell confirms every other old timer I can find on the location of the "Old Sod House." It is the old Sodhouse located on the point just above the present road and just above the Springer Spring, located in sec. 35, T. 26 S., R. 31 E. south of Malheur Lake. Therefore Springer's Spring and the spring below the old Sodhouse are one and the same.

Cooper & Hodge had a B. M. at the Sand Gap in the Sand Reef at the east end of Harney Lake which was established in 1910. This B. M. has either been destroyed or covered up by sand. I could not find it, therefore I ran a double line of levels from the Narrows and set a new B. M. This involved ten miles or more of accurate levels and took one and one half days. I also ran a line from Pelican Point to Windy Point. The only levels we ever had at Windy Point were computed from ice levels taken in 1913. My check with this computed B. M. was 0.14 which I considered good enough and did not double run the line back to Pelican Point.

The data requested given in order follows:

Foot of Sand Reef west side 4094.0.
Lowest point in flat to west of Sand Reef 4091.6.
Top of reef, average elevation, 4109.0.
Probable elevation of water when reef broke through in June 1881, according to Lee Caldwell 4107.
Foot of reef on west 4093:
About ¼ mi. west of reef roughly 4087.0.
Site of Old Sod House elevation, 4109.8.
Road below Old Sod House " 4106.2.
Top of bank below Old Sod House, 4106.0.
Water level in Springer's Spring, also spring below Old Sod House, also foot of bank below Old Sod House elevation, 4093.53.
Sixty yards below spring water elevation 4093.47.
" " " " bank " 4094.9.
350 feet below spring confluence of spring and Blitzen River elevation of water 4093.45, elevation of bank 4095.2.
800 feet below spring water elevation 4093.27.
" " " " bank " 4096.6.
1200 " " " water " 4093.19.
" " " " bank " 4095.6.
1550 " " " water " 4093.16.
" " " " bank " 4096.5.
1750 " " " water " 4093.06.
" " " " bank " 4095.5.

Intersection of Blitzen River with sec. line between Secs. 35 and 36, T. 26 S., R. 31 E. South of Malheur Lake elevation of water 4092.91, elevation of bank 4095.1.
Ground at Meander Cor. about 100 feet south of the ¼ Cor. between secs. 35 and 36, township and range above written, elevation 4098.3.
Ground by next meander corner to west, elevation 4099. 7.
Ground by next meander corner to southwest " 4100. 9.
This M. C. is about 100 feet southeast of the old Ed Springer house.
Center Narrows Lane 120 feet east of east end of Narrows bridge, elevation 4095.7.
310 feet east of east end of Narrows bridge, elevation 4096. 3.
980 " " " " " " " " " 4095. 1.
1240 " " " " " " " " " 4099. 7
Southwest corner of Narrows townsite " 4099. 7.
Northwest corner " " " " " 4100. 0.
Southwest corner " " hotel " 4103. 2.
East end of bridge at Narrows on planking, elevation 4096. 5.
West " " " " " " " " 4096. 8.
Bottom of center of channel below bridge " 4089. 7
Old government road below Windy Point " 4110. 7.
100 feet below government road at Windy Pt. " 4105. 4
Present road same as old government road " 4110. 7.
Lower edge Lawen Townsite southwest corner " 4103. 6.
" " " " center south side " 4100. 3.
" " " " southeast corner " 4098. 0.
General ground northeast corner Rube Sitz place " 4097. 7.
Front gate east of house Rube Sitz place " 4097. 9.
Average ground flat between Sitz place and Saddle Butte " 4095. 1.
Point below Herman Ruh place, edge of brush " 4098. 6.
" " " " " high point " 4104. 9.
In meadow south of house at Herman Ruh's " 4096. 0.
Meadow lands on Charles Johnson's place at Lawen, elevation 4099. 0.
Chas. Johnson's west from southwest cor. Lawen, " 4103. 7.
" " by barn, " 4106. 5.
" " by house, roughly, " 4109. 5.
Pellican Point north end of, top of ridge, " 4098. 9.
Pellican " " " " 20 feet west, " 4095. 5.
" " " " " 180 " " " 4094. 9.
" " " " " 200 " " " 4092. 8.
" " " " " 600 " " Bot. Lake, " 4091. 5.

Road Lawen to Narrows

	Av. Ground	Road.
Where road angles northeast near school H. north line sec. 25, T. 25 S., R. 32 E. W. M.,	4097. 0	4097. 6.
650 feet northeast of west fork Silvies River,	4096. 8	4097. 0.
850 " " " " " " "	4097. 7	4098. 0.
1050 " " " " " " "	4096. 2	4098. 8.
1¼ miles south of southeast corner Lawen	4096. 2	4098. 0.
1 " " " " " "	4095. 5	4097. 8.
¾ " " " " " "	4097. 0	4098. 3.
½ " " " " " "	4098. 1	4099. 3.
¼ " " " " " "	4099. 0	4099. 5.
At the " " "	4103. 7	4103. 7.

top of knoll about 300 north of above, 4109.1.

Foot of old lake bank easterly end Malheur Lake,		elevation	4105. 4.
"		"	4106. 7.
"		"	4106. 2.
Top of old lake bank easterly end Malheur Lake,		"	4113. 2.
"		"	4113. 7.
"		"	4112. 8.
700 feet west of Windy Point	Note: These distances are only approximate as they were only paced.	elevation	4099. 8.
1300 " " " " "		"	4097. 8.
1900 " " " " "		"	4096. 7.
2200 " " " " "		"	4096. 0.
2600 " " " " "		"	4093. 4.
Foot of east end of Saddle Butte.			
Foot of ridge extending easterly from east end S. B.		"	4107. 8.
Top " " " " " " " " "		"	4109. 0.

NOTE.—By using plenty of imagination this might be called an old lake bank.

From personal observations during the progress of this work and from what Mr. Lee Caldwell showed me it is my opinion that the elevation of the water in Malheur Lake at the time the Sand Reef cut through was about elevation 4,107.0. It may have been anywhere from a few tenths to a foot higher than this at Windy Point due to wind action and tule growth. Cooper & Dodge in 1913 made the elevation of the bottom of the lake 4,089.6, making the maximum depth of Malheur Lake at the time the Sand Reef cut through 17.4 feet.

I hope this covers the ground satisfactorily.

Respectfully submitted.

(Signed) M. V. DODGE,
Registered Civil Engineer,
Certificate # 254.

6. Survey of 1916 by M. V. Dodge; Plaintiff's Exhibit 57

Report by Mr. M. V. Dodge on survey of 1916—explanation of Plaintiff's Exhibit 57

With reference to the map (Plaintiff's Exhibit 57) procured from the State Engineer by Mr. Randolph S. Collins entitled, "Map of Survey of West Portion of Project to accompany application to State Land Board, Reclamation of Malheur Lake, made by C. B. McConnell, June 1913," will state that this is a map prepared from a plane table survey made in the field by myself, M. V. Dodge, April 10 to 17, 1916.

Mr. McConnell, as attorney, was representing a client who was interested in a project for the reclamation of Malheur Lake and I did the plane table surveying requested by Mr. McConnell and under his direction.

This map shows 1-foot contours, classification of vegetation as found on the ground, and a soil survey made by E. S. Greenslet. The legend shows clearly what is depicted on the map, both in the soil survey and the general plane-table survey.

I will say that the primary object of the map was not the exact determination of contour lines, although they are shown to a fair degree of accuracy, but was rather the classification of the land by the vegetation and by the soil survey.

This map was made using the United States bench mark at the Narrows as elevation 4,096.2, or about three-tenths above the elevation as determined by the Government in the Malheur Lake survey of 1931. (Plaintiff's Exhibit 3, Pecore's map.)

The "W. G." and "S. G." are not shown in the legend, meaning "wire grass" and "salt grass." One other symbol which does not occur in the legend is found along the base line marked "To Iron Mountain and To Windy Point" is "M. 1.3," etc. The real name of "M." is Mud. To illustrate, on the right-hand side of the map one inch southerly of the base line marked "To Windy Point" are the figures 92.7 and underneath them "M 14". This means elevation of the bottom of the lake 4,092.7, and below that 1.4 feet of mud.

Near the extension northerly of the section line between Sections 29 and 30, T. 26 S., R. 31 E., south of Malheur Lake, about one-half inch, on the map, north of the Neal meander line, occurs a notation "H. W. M. equal 95.4." This means high-water mark, equals 4,095.4.

This plane table survey is an independent survey and stands on its own feet, or, in other words, is independent of the 1914 survey map now in evidence, except that the extreme westerly end of the base line of the 1914 survey is copied on to this map and the soundings reduced to elevations and depth of mud on the same data on which this map is made, and two cross lines are shown, one occurring about 4 inches to the right of the "line to which areas are figured" and the other cross line being near the westerly termination of this base line.

In reducing the depth given on the 1914 map to elevations on this particular map made in 1916, as already explained, I appear to have used 4,094.5 as water elevation instead of 4,094.6, which I should have used, which leaves a possible error of one-tenth in these copied elevations.

In case of apparent discrepancy between this map and the map made in 1914 I will say that the present exhibit is probably more accurate as it was taken with more detail. Islands and other features which appear on this map may not show on the 1914 map (Defendant's Exhibit X-6).

P. HARNEY VALLEY

EVIDENCE RELATING TO

1. Population

a. 1879

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, testified in substance as follows:

The population of Harney Valley in 1879 consisted of about ten or twelve families; there were at least fifty or sixty buckaroos outside of Fort Harney. (R. 137.)

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

In 1876 when I first came into Harney Valley there were not a great many people here. Outside of soldiers, I do not think there were (R. 212) over a couple of hundred people, if that many. (R. 213.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. What would you say was the population of the (Harney) valley in 1879?

A. Oh, there was probably in this valley half a dozen stock men, who were located on land just as a camp, and not as owners of it.

Q. How many people would you say were living in the valley at that time?

A. Well, there might have been 50 or 75 with the buckaroos and the fellows who rode. (R. 1358.)

2. Water conditions in general

a. Annual precipitation

aa. In the early days

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on cross-examination, testified as follows:

When I first came here there was lots of snow and a good deal of rain. The snow would be deep in the mountains and there would be a run-off in the spring, making lots of hay, and many times we herded the stock so that the hay would get big enough to cut. (R. 160–161.)

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

There have been wet and dry years in the past, but I could not tell you what years they are. (R. 216.)

We have had alternatingly wet and dry years ever since I have been here. (R. 217.)

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was a great deal of water in the country in those early days. (R. 242.)

Mr. WILLIAM M. COLVIG, called as a witness for the plaintiff, testified in substance as follows:

It is well known to me, and probably to others, that the winter of 1862–1863 was one of the wettest winters they had known in Oregon. Rogue River overflowed its banks; and undoubtedly the snow was very deep in eastern Oregon. The first winter I spent in the army was 1863 at Fort Klamath. The snow was exactly six feet deep—to the top of my head—as we cut the trails before the (R. 407) officers' quarters and around to the various buildings, and I do not think it has ever been six feet deep at Fort Klamath since. That was in 1863 (R. 407–408)—the winter of 1862–1863. (R. 408.)

Mr. MARTIN ANDERSON LUCAS, called as a witness for the plaintiff, testified in substance as follows:

We had some snow during the winter after we had built the bridge across the Silvies River in February, 1868. (R. 415–416.) The following spring there was an awful lot of water in the fall. The water came up within half a mile of the post over there, at Camp Harney, which is on Rattlesnake Creek.

The following winter of 1868–1869, we did not have as much snow as we had the previous winter. There was considerable water came down Rattlesnake Creek in the spring of 1869, but it didn't come up to the quarters at Camp Harney.

I continued to work as a carpenter at Fort Harney for about ten months helping to build up the quarters and the buildings. When I got through there, I continued to work as a carpenter; I lived in a tent that winter (1868–1869) at Harney; then I moved to The Dalles and returned to Harney Valley three or four years later (R. 417) with a freight team which I bought, and hauled freight from the John Day Valley near Canyon City and Dayville, Oregon, to Camp Harney. Most of the grain we got there was about five or six miles below John Day and I brought it over the Blue Mountains to Bear Valley; then from there over into Silver Valley, and then into the Blue Mountains to Camp Harney. (R. 418.)

During the period 1870–1880, we had several dry years at that time, but I could not say what years they were. (R. 418.)

I do not recall the winter of 1889–1890 as an especially dry winter, but we had no water over there in the John Day country, it must have been the same over here.

Mr. BLACKMAR. Q. Do you recall how much snow there was in the mountains in that winter?

A. There were places in the mountains coming over where the man that packed the mail from Harney had to come out and bring me to the foot of the mountain on the other side. He would get on his snowshoes and come clear to Camp Harney. (R. 422.) There were two mail carriers. One was George Green and the other was Hughy.

Sometimes in the fall of 1890, when I was hunting down at the Island Ranch, the Island Ranch was pretty much flooded at that time. (R. 423.)

I do not think I was down at Malheur Lake between 1914 and 1920.

SPECIAL MASTER. Mr. Blackmar wants to know whether in the past eight years you have had dry weather at Dayville.

A. Well, there was a good deal of the time, yes; we had dry weather there, but it was not so awfully dry.

We also had good crops there on little meadows down in the John Day River country that were irrigated from the rivers; pretty much all of them; the headwaters of the John Day River where it is up in the mountains is fifty miles from Dayville. There are good farms clear up to what we call Warm Springs in the John Day Valley. (R. 424.)

Cross-examination.

I was not in Harney Valley only that one winter (1867–1868). (R. 416–417, R. 430.)

Mr. ROBERT IRVING, called as a witness for the plaintiff, testified in substance as follows:

Since I have been in this country, we have had unusually wet years at times, when the water has spread all over the country. I think that about 1897 was the wettest year that we have experienced here. (R. 437.) With the deepest snow in the mountains there was not so much water in the valley.

We have had some dry years here. I guess this year is the driest year.

Mr. BLACKMAR. Q. Do you recall the winter of 1889–1890?

A. I well remember it.

Q. Is that the year that is referred to as the cricket or grasshopper year?

A. They used to call it the equalizer year. It put everybody on foot. (R. 438.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, testified in substance as follows:

After we returned to Harney Valley in 1872, and settled at the warm spring down where the big sawmill is, about three miles from Burns (R. 456), we had to move from there with our stock in the winter of 1873–74 to where I live now, and what is called Happy Valley. At that time we had four feet of snow on the level. In

the spring of that year I made trips backward and forward two or three times in this country, and the water was very plentiful. It was everywhere around here. I crossed the Silvies River sometimes on the ice, sometimes on a bridge in the spring of the year. We were on the Government bridge about five or six miles above Burns. The road at that time went around the foothills to Camp Harney. (R. 457.)

Mr. BLACKMAR. Are you able to tell us any particular wet years outside of 1874?

A. Not outside of that, I could not.

Q. Or any dry years that stand out in your mind?

A. There has been some difference. Of course, I could tell that by the time I could get in there to cut my hay; that is the only way I could tell that or explain that.

I don't remember dates. (R. 463.)

From 1874 down to the time the Sand Reef broke through, we had the finest rains in this country; more water than we needed generally all over; but we are fighting for water now. Then we were trying to keep it off so that we could cut hay. (R. 470.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I do not remember the highest-water year prior to 1885. It would be pretty hard to fix that. (R. 505.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In the early days we had plenty of water; we had more rain and more snow; that condition varied in different years; in 1884 I left there and up to that time we had plenty of water; I have not been back there since. (R. 543.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I think that this country has been gradually drying up since I came here (in 1888). It is lots drier than when I first saw it. (R. 617.)

bb. 1870–1880

Mr. PRIM ORTEGO, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

During 1877–78 was the high-water mark, and it has never been up to that. (R. 530.)

Mr. LILJEQVIST. Q. It has not been up to the 1877 and 1878 mark?

A. No, sir; it hasn't. (R. 530.)

Major JOHN STAFFORD, called as a witness by the plaintiff, on cross-examination testified in substance as follows:

In the winter of 1876 and 1877 there were very, very heavy snows on the level, and at Camp Harney. I can not say how deep the snowfall was on the level.

In the winter of 1877 and 1878 there was practically no snow, because I slept outdoors in a tent all winter long. (R. 1269.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

When we first came into the country in June, 1879, everything indicated what you would call a good water year. The hay crop and the grasses were good; the cattle were running all over the country, and as I know the country (R. 1358) now, I would classify that as a very good water year.

The next winter, of 1879 and 1880, was an exceedingly snow winter, a hard winter; and there was considerable stock lost.

At Christmas time in the winter of 1880 there was about a foot and a half of snow and it commenced raining. It rained through all January and February, and the water ran flood those two (R. 1359) months. My judgment is that the people have a little misunderstanding as to what real water years are. The real water years are those years that it rains—the rainy years; and we have them sometimes, and that was one of them. That winter we commenced swamping cattle about the 15th of January and we worked continuously that winter until the last of February, and the water kept getting higher and higher. (R. 1360.)

Cross-examination:

Mr. LILJEQVIST. Q. Was 1879 a normal year so far as you could observe? (R. 1369.)

A. I have not been here long enough to be able to know what a normal year is. Every one seems to have a story of its own.

Q. In that year, 1881, how much higher did the water get than in 1879?

A. Oh, the big rise of the water was after that, after 1879. (R. 1370.)

cc. 1880–1890

Mr. FRANK WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1887, 1888, and 1889 were successive very dry years. We have had other seasons when it was very dry. (R. 202.)

The settlers began to move in there about 1887. In 1889 they burned all the tules; burned everything that would burn, hay and everything. The company was fighting them and the settlers wanted to force the company out, and the company the settlers out; the settlers burned all the hay, all the tules, and everything else to keep the cattle from living; the company tore down the settlers' fences and moved them out of the field. (R. 203.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

1888 and 1889 was known as the grasshopper year, a dry year. (R. 273.)

Cross-examination:

1888 and 1889, that was the year we lost our horses, and it is recognized as one of the dry years. (R. 296.) After that, the water came back. (R. 297.)

Mr. JEFF D. BILLINGSLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1889 was a low year. Eastern Oregon went dry that year.

Mr. LILJEQVIST. Q. There has never been anything like 1889 excepting this year, and this is still worse?

A. Yes, but I never did see the water over any roads. (R. 390.)

Mr. JAMES THOMAS BAKER, called as a witness for the plaintiff, testified in substance as follows:

We had three years that were dry. They are 1887, 1888, and 1889. Those were our three dry seasons, and the effect they had upon Malheur Lake was to dry it up mostly. (R. 578.)

Mrs. EMMA MILLER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1889 was a dry year. (R. 642.)

Mr. GRANT THOMPSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In the early days I have seen them use a boat to carry the mail out here east of Burns. (R. 720.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1888 was a dry year, but 1889 was very dry. (R. 738.)

The winter of 1889–1890 was a very hard one, we had lots of snow. (R. 738.)

Mr. ROBERT J. MCKINNON, called as a witness for the plaintiff, testified in substance as follows:

1898 was a high-water season. (R. 814.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, testified in substance as follows:

I recall the dry year of 1889 or 1890. It made the (Malheur) lake lower, and some parts of it were pretty dry. (R. 821.)

Mr. WILLIS GEORGE BARDWELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I do not remember whether 1885 was a dry year or not. I do not remember the different seasons that far back. I never took any photographs in those days. (R. 958.)

Mr. ROBERT DILLARD BAKER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1889 was a very dry year on Silver Creek. That is where I live at the present time.

Mr. LILJEQVIST. Q. Let us see if we can get this: There is a lot of testimony about 1889 being a very dry year. Now, did the water come back in the fall, around Christmas, or that winter immediately following 1889; or was it in the fall of 1890–1891 that it came back?

A. That is when the water came back in the spring on Silver Creek.

The main water came back in the spring of 1890, and they had a water season immediately following 1889. (R. 1081.)

Mr. ROBERT HAMILTON BROWN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1888 was a dry summer, but that winter of 1888–1889 we had a lot of snow, and quite a lot of rain. I may be mistaken as to that, but I hardly think so. (R. 1091.)

SPECIAL MASTER. You remember that there was a very dry year, followed by a very wet year, do you?

A. I remember there was a very dry year ahead of a very wet year.

Q. But the year you can not say?

A. No, I can't say exactly. It was all around in the eighties and the first part of the nineties. (R. 1092.)

Mr. GEORGE FRY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1889 was the driest year they had in those early days. The previous year was a dry year, 1889. 1888 was dry and 1889 was drier. (R. 1129.)

Mr. LILJEQVIST. Q. In fact, that was the driest year we ever had until about 1917, and then the last few years, is that correct?

A. Yes. (R. 1130.)

Mr. MARCELLUS B. HAYES, called as a witness for the plaintiff, testified in substance as follows:

1888 and 1889 were unusually dry years. The winter of 1889 and 1890 was an extremely hard one, lots of snow and lots of water in the spring. (R. 1196.)

Mr. JESSE O. ALBERSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. That (1889) is the driest year they ever had in this country except 1917, and the last two years, is that correct?

A. I believe so. (R. 1276.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I hardly think we have had a year like 1889, until just the last couple of years. (R. 1655.)

Mr. LILJEQVIST. Q. What is your best judgment as to when the climate started to change in this country?

A. In 1889, along there, it was pretty dry; 1888 was awfully wet; in '93 it was wet; '97 there was high water; awfully high water in '97. I think that is the highest water I saw in this country, in '97. (R. 1657.)

Mr. EMANUEL M. CLARK, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1888 was a dry year, too; 1887, 1888, and 1889 were increasingly dry years. (R. 1742.)

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

As I remember along about 1889 was about the driest time I ever saw up to this time. (R. 2019.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1888 was a very dry year. (R. 2080–2081.)

cd. 1890–1900

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

In 1893, the water was up that year.

In 1895, we had lots of water (R. 274), the bridges and things were washed out. There was lots of water up in here. 1896 was an average year. The water did not come up quite as far as it did in 1895 when we had lots of water.

1897 was a high-water year, a lot of bridges and things were washed out here in this country in that year, and they had a boat out at the Wilson place on the other side of the Silvies River, about three miles from Burns, that they used to come in here to Burns with the mail. That water came out of the Silvies River. (R. 275–276.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

The highest-water year I have seen was in 1890; that was during the hard winter. (R. 515–516.)

Mrs. EFFIE L. DUNN, called as a witness for the plaintiff, testified in substance as follows:

1894 was the highest-water year I knew in Harney County. (R. 851.)

In all of my residence here in Harney County since 1892, the year 1894 was the wettest year that I remember; and the driest year of my experience is the present year. (R. 853.)

Mr. JESSE O. ALBERSON, called as a witness for the plaintiff, testified in substance as follows:

1898 and 1899 (R. 1271) were pretty good water years. (R. 1274.)

Mr. JOHN W. BIGGS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

From 1893 when I first came here, until 1915, we had a great deal more rainfall than we have had since then. (R. 1501.)

Mr. ALVA SPRINGER, called as a witness for the plaintiff, testified in substance as follows:

I think as high a water as I have seen, that I remember of, was sometime in the nineties, probably along about 1894. (R. 2019.)

ee. 1900–1910

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

In 1902, I helped Mr. Campbell cut hay, right by his house, right around on that island. (R. 276.) (The Campbell house is about five inches on the map, Plaintiff's Exhibit No. 3, south of the Neal meander corner of section 8–17, T. 26 S., R. 32 E., north of the lake.)

1905 was a hard winter.

1906 was a good year, and it was a wet year. The water receded, and we cut hay on the lake. (R. 277.)

Mr. JOHN EDWARD LOGGAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1903 was a big water year; I do not recall 1904. I remember one big run-off after 1903. The reason I recall that year (1903) was because it was the year I moved to Burns to live here permanently. (R. 1481.) On the creeks east of here (Burns, Oregon) there would be a lot of water that would go eventually into the lakes in former years. (R. 1482.)

ff. 1910–1920

Mr. CLARENCE THOMAS CAREY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The dry season we had while I was there on my place near the mouth of Malheur Slough was about 1917 or 1918. (R. 771.)

Mr. L. W. SHEPARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1917 I suppose was one of eastern Oregon's very dry years. I was not around in that country but very few times and I do not

know about the other years very much (whether they were wet or dry years). (R. 1296.)

Mr. JOHN W. BIGGS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

From 1893 until 1915, we had a great deal more rainfall than we have had since then.

1915 was what we called our first dry year.

1916 and 1917 were a little better.

1918 and 1919 were very dry, and while in 1920 and 1921 there was a little bit more water, there (R. 1501) has just been the natural drying up since then; somewhere along there, probably from 1920 to 1922 we had one good year; and may be another year that was fairly good; it has just naturally been getting drier. (R. 1502.)

Mr. JAMES J. DONEGAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. When did the country start to dry up as some of the witnesses called it?

A. I think about 1915 we entered into a dry cycle.

Q. You don't know of any reason why it should be permanent?

A. I hope there isn't. (R. 1536.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1917 was fairly dry. (R. 1655.)

Mr. ORA WINFIELD HILL, recalled as a witness for the plaintiff, on recross-examination testified in substance as follows:

1917 was another very dry year; I drove cattle from one end of Pelican Island to the other that year. (R. 1719.)

Mr. JOSEPH KADO, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Since 1919 there has been a series of very dry years; 1922 was not a very dry year. (R. 2049.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

We had some other dry years. 1917 was a dry year. (R. 2084.)

Mr. THOMAS L. VICKERS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

The climate has changed since I went in there (Malheur Lake); it has been getting drier since about 1917. (R. 2315.)

Mr. ALPHENA VENATOR, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was more snow on the mountains in the early days than there has been in the last 15 or 20 years. (R. 2330.)

gg. 1920–1932

Mr. FRANK WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1924 was a dry season. (R. 202.) After dry seasons past, the normal water has always come back. We are hoping it will come back again. 1923 did not come back quite normal. We had a fairly good season. (R. 203.)

Mr. THOMAS J. VICKERS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1922 was a normal spring.
1920 we had a normal season, a dry season.
1923 was a normal season, we put in a crop. (R. 258.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1923 was a normal year. (R. 294.)

The memorandum that I gave to Mr. Blackmar of certain years and dates I worked out from my own recollection and with Mrs. Hayes. I had no memorandum from which I worked it out, and I gave a great many years there when seasons of normal water took place and some years of very high water. (R. 294.)

Seven or eight years ago the present dry cycle started a little and then kept getting worse and worse all the time.

We have not been having the snow in the mountains in later years. As a matter of fact, in the last few years, a great many settlers have been driven out of this country on account (R. 297) of the dry period we have been having, and no one can tell whether or not it may get better, and that we will have the same kind of weather we had fifty to seventy years ago. (R. 298.)

Redirect examination:

It is pretty hard to tell in this community what is a normal year, so far as rainfall is concerned. When I say a normal year, what I mean is really a substantial fall of snow in the mountains to make an overflow. If we get no overflow, we get no hay and no crops, and the precipitation in the mountains (R. 298) varies from year to year. I think that that Reserve up there where the pine needles are getting so thick, that that is the cause of us not having more water in the river. The Indians used to burn them out. The insects which are killing their timber now because of not burning them out, has been one of the reasons for the shortage of water, because a pine needle is thick and the snow falls and melts, and instead of running into the river, it stays there. (R. 298–299.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. And haven't they had considerable water several years since 1920?

A. Well, they had some, yes.

Q. In 1923 it came away back there close to where it used to come in the early days, didn't it?

A. No, I don't think so; I don't think it did. (R. 530.)

Mr. GEORGE E. WHITING, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1924 was a dry season.

In 1923 the water was not exceptionally high.

I do not remember 1922. (R. 566.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

I would say that in the last ten or eleven years it has been drying up; I don't know when it did start drying up, it has been so long I almost forgot about it now. (R. 1715.)

Mr. EMANUEL M. CLARK, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

1924 was a pretty dry year. (R. 1740.)

Mr. THOMAS L. VICKERS, called as a witness for the plaintiff, on cross-examiination testified in substance as follows:

We had a good run-off in about 1922. The water came down from the other side (south side of Malheur Lake) and flooded that country in there from the (R. 2315) Blitzen River. (R. 2316.)

Mr. GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

With reference to the climatic conditions (in Harney Valley) since November, 1931, it has been pretty cold weather; we have had a pretty good average snowfall; I do not know gage heights or anything like that, but it has been one of the biggest snowfalls we have had (R. 2529) for several years.

Mr. LILJEQVIST. Q. Has there been any year like it since '22?

A. I guess '28 was a good snow year.

I have not been up the Blitzen River this spring.

Snow has fallen all over the Steen's Mountain and the lower foothills. The snow has melted slowly this year (1932); that is, the first run-off. We have not had the last (run-off) from the high mountains yet. The first run-off has been without a chinook and went into the ground. (R. 2530.)

The run-off from the Steen's Mountain has not occurred yet. There is a large quantity of snow in the Steen's Mountain this year. The snow in the (Harney) Valley is about a foot; it went off I don't know how many times in the winter, then we had little rain spells; and then it would settle down, but it began to run off in the spring just a few days. Most of the snow in the valley that melted went into the ground instead of running off into the river. I do not

know whether there is any water running this spring yet in Malheur Slough or Nine Mile Slough. (R. 2532.)

hh. Early days compared with later years

Mr. ROBERT HAMILTON BROWN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Let me ask you this: Has there been a great change in the amount of snow and rainfall that you have been having in recent years as compared to the rainfall when you first came into the country?

A. Yes; there has been a great deal less, excepting in a hard winter, and then they have a lot of it.

Q. That was what year?

A. If I am not mistaken, I think it was in 1888–1889. I think that was a hard winter.

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was more water in the early days than there has been in the last 25 years. The country has been drying up for the last 35 or 40 years right along all the time as I have noticed. (R. 1117.)

Mr. RALPH CATTERSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

We have had more snow prior to the last ten years than we have had in the last ten years.

Mr. LILJEQVIST. Q. When did you quit having ordinary normal falls of snow in the valley as distinguished from the mountains?

A. I would say 10 or 12 years. When I was a boy, we had heavy snowfall in this valley. (R. 1718.)

Mr. JAMES A. TURNER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never have seen any summer like this in the days that I was in there (on my place). (R. 1728.)

b. Rivers, creeks, sloughs

aa. In the early days

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on redirect examination, testified in substance as follows:

I crossed the Silvies River in the high-water months. For two months in 1881 (R. 165) I carried mail from Fort Harney down to a little store in Egan; there was no bridge across the River and I had to swim the River and all these sloughs to get across; when I came to a slough I tied the mail sack around my neck to keep it from getting wet.

Some of the waters about the country on the north side of Malheur Lake was the overflow from the mountains here.

I have crossed Poison Creek and Cow Creek, and all these creeks along here, and when they would raise they would run into the lake and the sloughs and then they would run into the lake.

In those early days the farmers and ranchers did not have any dams or other ways of controlling the water, except two brothers by the name of Boone dug a ditch and then put in a dam of willows at a place about 8 or 9 miles from here; the high water washed the dam out, and they never finished it. That was the only dam I know of in the (Silvies) River at that time. (R. 166.)

In the high-water years that I have referred to along the Silvies River there would be water every place; the water run all over the whole country.

The run-off in some places is fast, and in other places it is slower. Take the river here: the river at the first rising was not filled up. The other small streams, such as Poison Creek and Cow Creek (R. 167), which were supplied with water out of the hills, they had quite a bit of fill. After the Silvies River strikes the valley there is not much of a grade to it, and then it becomes a small stream.

We always had to wait until the water dried up to cut the hay; sometimes later than other times; it went all the way from March up to the middle of June before the water started to recede, and the haying season came after that. (R. 168.)

Recross-examination.

In the early days when we had those high-water years they used to be principally the same; sometimes the snow would be deeper and there would be more water and it might go off faster. The conditions described as to the amount of water in the country were the normal conditions at that time. (R. 168.)

Mr. SCHUYLER WHITING, called as a witness for the plaintiff, testified in substance as follows:

In the spring of the year, in the early days, the water used to get pretty high and overflow the banks of the Silvies River and run out all over the country on both sides of it. In those days, the Silvies River would come down the main channel in the spring of the year; then there was Foley's Slough that comes out above the place, and the water would run out of that and then cross to Poison Creek, from Poison Creek down to the Malheur Slough, and from the Malheur Slough to the lakes on the east side of the River. (R. 171.) The overflow land would not be so wide, but the water would run in channels about that far. I have seen the water overflow the east side of the Silvies River where we lived to the foot of the hill, a little over half a mile wide. On the other side of the Silvies River down this way it used to overflow to what we called the Stancliff Bridge; it would overflow clear through where the streets of Burns are now, and run off through this country down in here. That was in the

high-water years. In the old days before the Silvies River channel was washed out, or cleaned out like it is now. (R. 172.) I have crossed the Silvies River on horseback a good deal. In this part of the country the Silvies River generally has a hard clay bottom.

In the early days when we came here, the Silvies River channel was full of driftwood and stuff like that; it was not washed out and the willows would grow in close to the bank; the channel was not very wide when the water came down early in the spring, it would carry only about a quarter of the water that it does at the present time, and we had more water in those days; the channel would not carry the water, it would run over the streets and over the banks of the Silvies River. The land is higher and so the water ran away from the river wherever it overflowed until it broke some slough where it would run back in again. (R. 173.)

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

In the spring of the year when the run-off came from the mountains, as my brother has stated, the Silvies River would not carry the water and no portion of it. There was a strip of land lying north and east of the Silvies River at the place that we lived that was probably a half a mile or a mile more that was all water. It would be from four feet deep to almost swamping a horse. From where we lived it was about 25 to 28 miles in a straight line to the lakes.

In a certain part of the (Harney) Valley, between our ranch and the lakes, in what we called "The Island," which has already been described, that would be nearly all under water. Then there was a strip of higher land lying east and north there where you would seldom see any water on it at all, only in low places where the snow ran in, with the exception of the sloughs coming down from the (R. 186) mountains that eventually emptied into Malheur Slough, which in turn empties into the (Malheur) lake at Saddle Butte. Generally speaking, in the spring of the year the low places in the country from our ranch down to Malheur Lake was covered with water from the Silvies River. That water condition sometimes extended up here in the neighborhood of Burns.

All this so-called irrigated land which is shown on all the plats was all under water at a certain time of the season, in the spring; it was overflow land. (R. 187.)

Cross-examination:

The water conditions in the springtime that I have described around the Silvies River would permit a rowboat to go over a five-foot fence in places. We did not have any fences then. In some places it would be from (R. 200) eighteen inches to three feet. All that water went into Malheur Lake because there was no other place for it to go. After the water got off the lands into the lake, the lake backed up. (R. 201.)

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, testified in substance as follows:

I have been up and down the Silvies River. I have heard the other witnesses testify how in the spring of the year the Silvies River overflows and runs all over the country (R. 220) and that is substantially my recollection of the situation there (R. 221).

At one time the Blitzen River flowed nearly as much as the Silvies River with the same general situation of the water spreading over the country as with the Silvies River. (R. 223.)

Mr. THOMAS J. VICKERS, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

The small streams that used to feed Malheur Lake have all dried up, because there is no water; there is no snow in the mountains and you have to have snow to make water. (R. 262.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

I have been clear up part of the ways by the Silvies and the Blitzen Rivers. Quite a ways up, two or three miles, maybe more, there is considerable swamp. It was there in the early days, on both the Silvies and the Blitzen Rivers. (R. 283.)

Mr. MARTIN ANDERSON LUCAS, called as a witness for the plaintiff, testified in substance as follows:

While at Camp Harney, I was sent out with some other men to put a bridge across the Silvies River. (R. 414–415.) I do not know at just what point it was; it was somewhere in line with Wright's Point. We built the bridge in February or March (1868); some time before the snow commenced to melt. We shoveled down through the four feet of snow to put the mud fills down and get the stringers across; then when we got the right of way cleared and the snow off, we put the stringers across the river from one bank to the other; we could not dig into the ground it was frozen so; it was a hard matter to get any pit to put the sills in, so we laid the planks down on the solid ground and put the stringers across on that; then we put the planks on; we had three mule teams there with lumber; we put the planks on the stringers and the stringers were sixty feet long. That evening I returned to the fort. (R. 415–416.) That was in the spring of 1868. (R. 416.)

Cross-examination:

The stream we built the bridge across was the Silvies River. (R. 430.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Up and down the Silvies River in the spring runoff, there is a great deal of water that reaches that river before it reaches the (Malheur) lake, isn't there?

A. Oh, yes. The sloughs run out naturally, and did when I first came here without any artificial work at all.

Q. And then those slough waters would eventually get into the lake, or dry up in the sloughs?

A. All of it gets back into the main stream, except what breaks out during the floods.

Q. Do you have the same situation over on the Blitzen (River)? (R. 470.)

A. Not so much.

I lived on the south side of Malheur Lake in the early days.

Mr. BLACKMAR. Q. At the time you first went there, did there seem to be two channels of the Blitzen River running into the lake?

A. There was an old channel that run straight down in, and then there were two streams that led off west; and the reason I know this is because Peter French was the owner of them and he turned his water out of those sloughs; he turned it down by Alva Springer's place, and it washed out the (R. 471) channel there. Before that, there was no channel. He turned the water there to get it away as he wanted to cut the hay.

The west slough is the one that goes by Pete Caldwell's house. (R. 471.)

The McLaughlin slough is up what we call the Rocky Ford Lane. (R. 471–472.)

Mr. BLACKMAR. Do you know whether or not McLaughlin Slough has any connection with the Blitzen River?

A. You see, the Blitzen River was above. There was no channel there. It was a big tule swamp both ways, up to the Diamond (Ranch) and also up to the P Ranch. I think they ran a dredger through there and cut a channel.

In the early days when I first came here, there was no channel there. The water just spread out. Peter French dug ditches to carry water to go below there, and the water broke off, fell over eight or ten feet in places, and made a channel from there down to the lake. After that, Bill Hanley, commissioner of roads, who was running the business then for Peter French, put the dredger in and built the canal. (R. 472.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I have been around the Blitzen River a good deal; the river runs fast away above; down below it is not much of a current until you get to its mouth, where it empties into the (Malheur) lake; it is quite a bit of a fall right there, but (R. 509) further back it is not much until you get away back, then it has a fall. (R. 510.)

I am familiar with Rocky Ford on the Blitzen River. It is about the only ford on that river. After the Blitzen (River) gets below that ford, it has high banks; the Blitzen River begins to spread out when it gets pretty close to where the Sodhouse is.

Mr. BLACKMAR. Q. And right in there, does the river then spread out all over the country at certain seasons of the year?

A. Yes. The farther it gets out; and then it runs into what is called the sagebrush, and, you see, the sloughs come out of there.

It looks like the sloughs come out of the river, you can see them there. Sometimes you can see the water come out of those sloughs. (R. 510.)

There is a place up there on the east side of the Blitzen (River) where there are channels there that show, according to my recollections, old channels. McLaughlin Slough is just one branch of the Blitzen River. The water runs from the Blitzen River into the McLaughlin Slough. That slough is not very far (R. 511), I should judge a little over a mile to the Rocky Ford. (R. 512.)

Cross-examination:

I do not know whether the waters were held up a lot more in the Blitzen Valley before Peter French, or his successors, built the big canal on the south part of it, or south of the Sagebrush Field. (R. 536.) I do not know whether the water runs more in the big swamp south of the Sagebrush Field now than when it did before they built that big canal. (R. 536–537.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, testified in substance as follows:

My place is situated about two miles west of the Silvies River and we got our water out of the Silvies River when there was plenty of it.

When the spring run-off comes from the mountains I have seen the Silvies River when it would overflow both prongs; but it hasn't overflowed in late years.

Mr. BLACKMAR. Q. Those times you mentioned as the river having gone out of its banks, does the water extend then over the entire country pretty much, over considerable area?

A. Well, that depends, of course, upon how much there was. We have had heavy snows in the mountains, and heavy run-offs. If it melts rapidly that makes it overflow and spreads out pretty well; that is as it used to be; but now people have dams in the river of late years, and they hold it back, and it (R. 614) doesn't spread as much as it did at one time. (R. 615.)

Mr. CAMPBELL C. KILBURN, called as a witness for the plaintiff, testified in substance as follows:

I am told that the Island Ranch embraces about thirty-eight thousand acres; in the early days we had a lot of cattle there; (R. 734); we had lots of water there for them; they wintered out to a certain time; but we haven't got the ranch now and we haven't got the same rains, and we haven't got the grass on the meadow during these dry years, that is why we do not have as many cattle there. The Island Ranch has been watered from the Silvies River since the early days. There was a time when it was very swampy there; you could not cut hay too far down in there, but since then they have made canals

through there to drain it, and they have put their Island Ranch on there. By the use of the canals you can drain the water that comes down and overflows on there. When there is lots of flow there is lots of water, and when no flow there is no water. (R. 735.) The water would come down years ago, and there was lots of water; there was no way for it to run off, it was a very flat country there, so they made a canal that drains that when it is too wet for them. You can let the water drain now, otherwise it lays there and evaporates as it did years ago. (R. 736.)

Cross-examination:

I do not think that the Silvies and Blitzen Rivers carried a lot of silt down into Malheur Lake. They carried dark water, but it was more of a yellow water; would not know just what color to call it but it was not mud. If you dipped it up in a bucket it would not be white. (R. 745.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Now, there is some evidence in one of these early records (R. 1375) about one of these old officers of the United States Army hitting the southeastern part of Malheur Lake, and then going westerly and hitting a sluggish stream, and then crossing a ford. From that knowledge of your country, would that substantially describe crossing Rocky Ford where Rocky Ford now is?

A. Well, the Rock Ford is the only ford there is on the Blitzen River from the P Ranch to the (Malheur) lake.

Q. So then, if he struck the southeastern part of Malheur Lake, and went westerly until he struck a sluggish stream, he undoubtedly struck the Blitzen River?

A. Yes, and the Blitzen River is very sluggish along that sagebrush.

Q. And you did a lot of scouting around that country in the early days?

A. Yes, at that particular time.

Q. Leaving Malheur Lake on the south and traveling half a day's journey to the south where you found a ford, would that substantially describe how far you would go on horseback when you first came into this country?

A. Any of us fellows riding a real horse wouldn't bother with that for a day's work. That is only about 12 miles.

Q. That was half a day. He described it as a half a day.

A. That is pretty good; that is very good.

Q. Then, Mr. Hanley, if he crossed a ford after traveling half a day south from Malheur, he probably crossed at Rocky Ford which is the only ford crossing the (Blitzen) River?

A. Yes. (R. 1376.)

Q. And then he started to cross the river, and he said he struck another stream flowing east. Do you know whether that was the west fork of the Blitzen (River) or McLaughlin Slough?

A. That would indicate Diamond.

Q. No, going westerly.

A. Oh.

Q. After crossing Rocky Ford, and going westerly he struck another channel that he also had to ford. Wouldn't that be the west fork of the Blitzen, or what is now known as the McLaughlin Slough?

A. That ain't very far.

Q. No, I know it isn't very far.

A. No, it ain't.

Q. That is where he named the river, and used the word "Donner." What I am trying to get at is this: After he crossed Rocky Ford, he couldn't proceed due west, because there was a big marsh, and wouldn't he have to follow along the southwesterly side of the Big Sagebrush Field to get around the marsh?

A. Yes.

Q. And as he did that he would find another stream of water, wouldn't he, that led out from the swamp flowing northeasterly into the Blitzen River?

A. Well, that would be just a chance as to how the water was running off, whether it would be out there, or not. (R. 1377.)

There are no streams at all flowing through the Big Sagebrush Field which is north of where the Rocky Ford Lane is located, excepting the west fork of the Blitzen, and the Blitzen River itself. The west fork and the Blitzen come together.

Mr. LILJEQVIST. And it is now called McLaughlin Slough, isn't it?

A. Yes. McLaughlin Slough and the Blitzen River isn't 10 or 12 or 14 feet deep through that Big Sagebrush Field. The McLaughlin Slough, when you get out into the Sagebrush Field, disappears.

Mr. LILJEQVIST. It is a very deep slough for a long ways there, isn't it?

A. No; it has levees in it, and it has had levees for years. You see, I operated on the Blitzen for 10 or 12 years.

Q. Well, the Blitzen River then is a deep channel through that sagebrush field, isn't it?

A. It is a washed out channel, probably 7 or 8 feet deep. (R. 1378.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

They have been taking out water (from the Silvies and Blitzen Rivers) to irrigate. I suppose it would finally go by and down this way into the lake. There is a lot of water that has been taken out. (R. 1662.)

Mr. LILJEQVIST. Has there been a lot of sagebrush land reclaimed in the Valley of the Blitzen and Silvies (Rivers) since you came into the country?

A. Yes. I would not say about the Blitzen, but I think the land reclaimed mostly in the Blitzen was land taken up by the making of the canal by Mr. French and his successors afterwards.

Q. Do you know how many acres of sagebrush have been put under irrigation from the Silvies (River) since you came to the country?

A. No.

Q. Have you any approximate idea?

A. No.

Q. Was it a large area?

A. It is a good deal of it. (R. 1663.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, on recross-examination testified in substance as follows:

I am familiar with the Big Sagebrush Field on the Blitzen River.

I am familiar with the McLaughlin Slough. (R. 1806.)

I am familiar with the Rocky Ford Lane.

Mr. LILJEQVIST. Q. What is your judgment of a detachment of soldiers hitting the lake, the southeast part of Malheur Lake, traveling west until they struck a sluggish stream, and traveling a half a day and crossing a ford, or fording the river, what is your judgment as to where they would have gotten at that time?

A. I don't know where they crossed; I can not imagine.

Q. Was there any crossing in those days at all except at Rocky Ford Lane?

A. That was the only crossing I knew of. There may have been other crossings, but I knew of none other.

Q. If the soldiers struck this sluggish stream on the south bank of the Malheur Creek and found they could not cross it, and traveled a half day south until they found a ford, what is your judgment, from your knowledge of the country there, as to probably the place they crossed, if they traveled south?

A. They probably crossed at the Rocky Ford; I don't know. (R. 1807.)

Q. Immediately west of the Rocky Ford Lane in the early days, wasn't there a vast swamp? North is the Sagebrush Field? (R. 1808.)

A. That is a long ways from the Rock Ford to where the swamp was, down toward the Narrows.

The grain field was swamp up by the Escondido Ranch.

Mr. LILJEQVIST. Q. If they crossed at the Rocky Ford Lane, and they wanted to go back to the Malheur Lake, would they have had to cross what is known as the west fork of the Blitzen (Blitzen)?

A. They would have had to cross at that Rock Ford, I suppose.

Q. After crossing the Rocky Ford——

A. (Interrupting.) They would not have to cross any more Blitzens.

Q. How would they get across McLaughlin Slough, without fording it?

A. I suppose they could cross it. There may have been many crossings on McLaughlin Slough. I don't know so much about (R. 1808) McLaughlin Slough.

Q. Was there any other stream west of the Blitzen, west of Rocky Ford Lane, excepting McLaughlin Slough?

A. Not that I ever knew of.

Q. And that flows northeast into the Blitzen River, doesn't it?

A. I think it does. (R. 1809.)

bb. 1870–1880

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, testified in substance as follows:

In 1877 I was up and down the Blitzen River.

Mr. BLACKMAR. Q. What I want to ask you is: As you observed it in the early days, was there a good deal of brush, driftwood, and dirt and one thing or another in those rivers?

A. In the early days there was no channel, you might say, in the (Blitzen) River from the Rock Ford to close to the P Ranch; from the Rock Ford you go on up that country there, and there was no designated channel anywhere. There might be a little channel for a ways, and then there would be a channel some place else. (R. 1108.) There was no channels. This caused the water to spread everywhere all over the flat from one side to the other. (R. 1109.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, testified in substance as follows:

In 1879 and 1880, the Silvies River was up at this part of it (north of Malheur Lake, and in the vicinity of Burns, Oregon); it was practically like it is now; the lower part, after you got on to the Island (formed by the forking of the Silvies River), and the Bell A Ranch the channel disappeared; there was no channel; and on the opposite side, on what we called the Potter Swamp side, that is the west side, about the same distance down, the channel there was blocked out and both places were called swamps; and the general irrigation of the country for some reason and in some way is practically about the same now, after all the years and all the improvements we have put in, still the spread of the water is about the same as it is to-day. In those days, there was a large part of that land down there north of the (Malheur) Lake which in the spring run-off obtained waters from the Silvies River. (R. 1359.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

When I first came into Harney Valley in July, 1873 (R. 1774), we camped on the west fork of the Silvies River, which had running water in it at the time. There was no bridge there, but the troops did not have any trouble crossing at that point, and it was not necessary to swim the horses at that time. (R. 1775.) In camping through that part of the country in and around the fork of the Silvies River and through the Island Ranch, the detachment had no trouble whatever at that time in getting through there on account of any

water and mud. (R. 1777–1778.) I was part of the detachment. There were three troops of the First Cavalry, there may have been four, I am not exactly sure. I came by Wright's Point, but it was quite a distance from the lake—not close to the (Malheur) lake. I must have come between the (Malheur) lake and Wright's Point, because the lake was off to the south and east. We were not always in sight of the lake. We were traveling away from the lake to a certain extent, getting farther away from it all the time, and then you could not see the lake unless you go on an eminence on account of, I presume, the vast extent of the tule marsh (R. 1778) that lay between the water and the dry land, the sagebrush land. (R. 1779.)

cc. 1880–1890

Mrs. Ollie Darsey, called as a witness for the plaintiff, testified in substance as follows:

When we first came here to live in Harney Valley, in 1882, we went on the Island Ranch; my father worked for Todhunter & Devine; we were located about a mile and a half to two miles from the west prong of the Silvies River, on the Island, or between the two prongs of the Silvies River. I have had occasion to observe the action of the Silvies River in the spring of the year. (R. 646.) When the break-ups came, the water was pretty high in the Silvies River; it flooded out into the sloughs and flooded over the meadows east and west of the Silvies River for a considerable distance, and that is where we cut the hay. I would say the water would go a distance of a mile and a half or perhaps two miles. On the west side of the Silvies River there is a place called Potter Swamp, that comes across there; part of it is on the west side and part on the east side of the Silvies River. The west prong runs right between it; that water flooded out there near to our house. We were on a sagebrush knoll. The amount of water that the Silvies River spread out from year to year depended upon the amount of snow that came in the mountains, and how the sloughs filled up. It changed from year to year. Some years there would be a good deal of water, and they would be flooded; other years there would not be so much. (R. 647.)

As a rule, these sloughs were filled up a lot by the run off, and the snow that was on the ground too, but it was the water that came from the Silvies River. It was not the back-up water from Malheur Lake. (R. 648.)

Mr. Grant Thompson, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with Silvies River, probably not nearly so much as many others; when the run-off comes, Silvies River overflows and spreads all over the country. Some of that water eventually finds itself in the lake. It kind of makes sloughs in places. (R. 708.) It is pretty much the same condition practically over the Blitzen, although I am not familiar on that side of Malheur Lake. (R. 709.)

dd. 1890–1900

Mr. ROBERT DILLARD BAKER, called as a witness for the plaintiff, testified in substance as follows:

The first spring that I was at the Island Ranch was about 1890; I was there for two or three weeks; took some cattle there. There was a good deal of water there at that time on the Island Ranch. The water came from the mountains (R. 1074) and onto the Island Ranch from out of the Silvies River. (R. 1075.)

ee. 1900–1910

Mr. JOHN EDWARD LOGGAN, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Some of the witnesses the other day spoke about a time in this country when the water (from the Silvies River) was almost up here to Burns. Was that during your time?

A. Yes; I have seen it in Main Street—say three or four (R. 1480) miles, and then a flood to the lake. That was in the spring of 1903; that was one of the years. I have seen it once since then; I recall it since I lived in Burns when the water was high that way twice; I do not recall the second time; probably the year I came here. (R. 1481.)

Mr. JOHN EMERY GRAVES, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have seen the Nine Mile Slough.

Mr. LILJEQVIST. Q. Where has the water of the lake been backed up in that slough, or has it ever backed up in that slough?

A. I don't know. (R. 2122.)

ff. 1920–1931

Mrs. EFFIE L. DUNN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In 1920–1921 the water from the Blitzen (River) overflowed the lands and got on our lands until it made it very disagreeable to everybody. We had a lot of water in 1921 and it came in February. (R. 865.)

gg. Water measurements

Mr. JOHN W. BIGGS, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been in all of the water adjudication cases in this valley, involving the Silvies River, Silver Creek, and the Blitzen River.

Mr. LILJEQVIST. Q. Now, from your personal knowledge of the country, will you state whether or not there has been a great deal of water that has gone into Malheur Lake and Mud Lake that did not

flow into the lakes through the channels of the Silvies and Blitzen Rivers? (R. 1502.)

A. Yes; there is quite a bit of the water that goes in at different times.

Q. In other words, measurements or estimates based upon those two rivers would not give the complete story as to the waters that flowed into those lakes, would it?

A. No.

Q. Malheur Slough—doesn't that drain a considerable area?

A. That drains an area that used to be very considerable. Now, there was Rattlesnake Creek and Cow Creek and Rock Creek, and three or four other smaller creeks that would come down and spread all over the northeast part of the valley here, in which there would be thousands of acres under water there. Then they would collect down below into the Malheur Slough, and that would run on into the east end of Malheur Lake.

Q. Is there anybody at all in all the engineers that have been here that made any measurement of that amount of water which flowed into the lake through Malheur Slough? (R. 1503.)

A. I never heard of any measurements.

Q. And it is only in comparatively recent years that measurements have been made?

A. I don't know. Personally I know of no measurements ever having been made on the Malheur Slough.

Q. Do you know when they commenced to measure the Silvies River?

A. There were some measurements, erratic ones prior to that, but the first real measurements began in 1903. The Government (R. 1503) established two stations that I know of, probably others, one about 8 or 10 miles above town (Burns), and one up in the Silvies Valley, right where the River starts down through the canyon.

That is where the canyon hits the valley; it is about thirty miles above town by way of the road; to go around the River it is a little over 50 miles.

Mr. LILJEQVIST. Q. If you had six inches of snow in the Silvies Valley below that lower point you would have a vast amount of water flowing into the Silvies and to the lake in which you had no measurement.

A. They had that measured about 8 or 10 miles above town here, where the River comes out of the canyon into Harney Valley.

The measurements about 10 miles above Burns, I think, was near the old Sylvester place. Both of those gages are above Burns.

Mr. LILJEQVIST. Q. What I am getting at, Mr. Biggs, is this: That six inches of snow is a very minimum, let alone any great amount of snow which might fall in this entire Silvies Valley, and if it was below that gage, there would be no measurements on it at all?

A. Except the west fork of the Silvies River this side of (R. 1504) it where it enters the (Malheur) lake, they kept some measurements

there, but I don't think those were kept as full and regularly as they are up here. They are at the Graves or Ruh bridge.

I do not know when those measurements commenced; I have seen measurements from there a few times; that is why I do not know whether it is a regular measurement or not.

I do not know anything at all about where the measurements on the Blitzen (River) were kept; I never had anything to do with that at all. (R. 1505.)

3. Towns in Harney County, Oregon

Burns

When I first came into this country in 1879, there was no town here at Burns, and Camp Harney was being abandoned. There were a few settlers around Camp Harney because that was a post. There were a few settlers in the (Harney) Valley.—William Hanley. (R. 1358.)

My father named this town after Bobbie Burns, a Scotch bard.—Archie McGowan. (R. 1564.)

Crane

This town was not established when I came here in 1879.—Lee Minis Caldwell. (R. 165.)

Egan

This town was established about 1881, and was situated about 2½ miles southwest of what is now the town of Burns. It was named after the Indian Chief Egan. The largest population I have ever seen there was about 50 people. I do not think it was ever any larger than that.—Lee Minis Caldwell. (R. 164.)

Fort Harney

Fort Harney was established when I came here in 1879. It was situated just above what is now the town of Harney. I was up there to the fort in the early days. There was no settlement there—just a fort.—Lee Minis Caldwell. (R. 165.)

Harney

This town was not established when I came here in 1879.—Lee Minis Caldwell. (R. 165.)

Lawen

This town was not established when I came here in 1879. I do not know when it was established.—Lee Minis Caldwell. (R. 164–165.)

They have moved the old town of Lawen up on the highway now. The old buildings are still there, and they are away from the road.—Schuyler Whiting. (R. 175.)

Lawen was not in existence in 1874.—Tobias Stilley Riddle. (R. 544.)

When I first went in there (in 1887) (R. 1181–1182) there was no town of Lawen.—Frank Catterson. (R. 1191–1192.)

Lawen (Old Town)

The old town of Lawen is (was) about a mile south of the new town, or a mile south of where the store now stands.

SPECIAL MASTER. And Lawen as shown on this map (Plaintiff's Exhibit No. 3) is the new Lawen?

Mr. PECORE. No.

SPECIAL MASTER. It is the old town of Lawen.

Mr. BLACKMAR. It is the old town of Lawen.—Mrs. Marcellus B. Hayes. (R. 1240.)

The Narrows

When I first came into this valley in 1879 there was no settlement at the Narrows.—Lee Minis Caldwell. (R. 165.)

Princeton

Where this town is now was what we called The Wells. We used to camp there at night.—Lee Minis Caldwell. (R. 165.)

Voltage

This town was not established when I first came into the valley in 1879.—Lee Minis Caldwell. (R. 165.)

4. Seasons of the year:

a. Ice conditions

aa. In the early days

Mr. LEE MINIS CALDWELL, called as a witness for the plaintiff, on redirect-examination testified in substance as follows:

Sometimes it starts to freeze here in November if it is a cold fall; I have seen it freeze up here in November and not break up until April; I have seen 120 days sleighing at one time from November to the 26th of April.

It nearly always freezes up here in November and generally stays frozen; sometimes it would break up in February, but any time it

broke up in February, it would freeze over again; then generally in March or April we would have the general break-up. (R. 167.)

Mr. Schuyler Whiting, called as a witness for the plaintiff, testified in substance as follows:

I have heard the testimony of Mr. Caldwell with reference to ice conditions in this vicinity (R. 173) and that is substantially correct with respect to the time the ice forms and when it goes away. (R. 174.)

Mr. Frank Whiting, called as a witness for the plaintiff, testified in substance as follows:

When we are farming, we have frost most any time of the year; the freezing commences first of January and quite a lot of ice forms in the streams in April (R. 197) or May. Occasionally we have frosts in May and June; nearly every month of the year in this country; I have been in the alfalfa business for the last twenty years and I have frequently had my alfalfa frozen in both June and August. (R. 198.)

Mr. Darius Hynson Smyth, called as a witness for the plaintiff, testified in substance as follows:

The months in which frosts will occur in Harney Valley is just as uncertain as the wind. You could not make any guess at it very well. You might guess at it, but you would not be apt to hit it. I don't keep dates, but I have seen frost here every month in the year; I think I have seen frost during the whole time I have been here every month in the year, but there is some difference in seasons.

I have had a vegetable garden around my home.

Mr. Blackmar. And most vegetables do not stand frost very well, do they?

A. Well, there is all the difference in the world as to the place you are. Right in half a mile there will be so (R. 464) much difference that you can't make any reckoning on that.

Sometimes we have had our vegetables nipped by the frost in all summer months. It may start to freeze or the ice start coming tomorrow, but from Christmas until New Year's will be about as bad a time as you could have here for heavy ice, and as to how long the ice would last, would depend upon where you are. Out on Malheur Lake I have seen solid ice stay there into May, but not usually. It generally goes out. The solid ice there on the lake is as deep as the water there. (R. 465.)

Mr. Prim Ortego, called as a witness for the plaintiff, testified in substance as follows:

The frost in some years comes a whole lot quicker than in others; it is something you can not tell (R. 508); I have seen it pretty near every month of the year.

I have seen Malheur Lake freeze hard enough for stock to go in (on) in November. (R. 509.)

bb. 1920–1931

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

This fall, 1931, has been rather free of frost than commonly. (R. 198.)

b. Rain conditions

aa. In the early days

Mr. SCHUYLER WHITING, called as a witness for the plaintiff, testified in substance as follows:

In the early days, we got rain in April, May, and June, and in the fall sometimes in October and November. (R. 174.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, testified in substance as follows:

The spring break-up usually comes in April, but I never kept any records on anything of that kind. (R. 466.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

The spring break-up comes at different times. March is supposed to be about the average; that is the month we usually went into Malheur Lake to get our stock. (R. 509.)

Cross-examination:

I have seen high water come here in late years; that would come in January and February; I have seen the water just as high in January and February as it was at any time in the spring, and in late years. (R. 529.)

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, testified in substance as follows:

I have observed the effect of the chinook winds upon the frozen ground or ground covered with snow, and it causes the water to run off and down to the low places, the little dry lakes and the holes, and when there are no dry lakes, it goes right on into the main lake.

Mr. BLACKMAR. Q. Well, isn't it a fact if you get a warm spell in February, before the ground freezes, that you get considerable water in Malheur Lake in those seasons?

A. Yes, sir. (R. 1109.)

bb. 1880–1890

Mr. ALVA SPRINGER, recalled as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Mr. Springer, I want you to tell the court what you know about the spring run-off for the many years when

you first went into the country. Was there a difference in the run-off? In other words, was there a run-off from the lower hills, the lower part of the country, before the mountain (R. 2052) run-off came?

A. Yes.

The first break-up generally came in February; sometimes it would be in January, but (with) the first break-up we would have high water, which came from the foothills, the low hills, and the valleys; the last of May or the first of June we would have another high water off of the high hills, but we haven't been getting the first high water here of late years, there hasn't been any.

Mr. LILJEQVIST. Q. That is what I want to get. That is a fact known to all of you people who were in there from the earlier days, isn't that correct?

A. Yes.

We haven't had any real high water in this first run-off for several years; I think the highest water I have seen in that (Blitzen) River was in an early run, years ago; that is, when there was a lot of snow in the foothills.

We haven't had that first run-off to amount to much for several years. (R. 2053.) I do not remember exactly when it stopped; 10 or 12 years ago. (R. 2054.)

Mr. WM. HENRY MCKENZIE, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

To my recollection there has been two kinds of freshets in this country, one the early freshet from the low hills and a later one from the high mountains. We have not been getting those freshets from the low hills in the last ten years. In the early days when I first knew the country we did not get those freshets regularly. There have been years when we got them. (R. 2160.)

cc. 1900–1931

Mr. JOHN G. DARSEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Generally the spring freshet would come on during April, May, and June. One year there was quite a break-up in February. Ordinarily, the spring freshets came along in March and until April; that is when the spring water would come down. (R. 1962.)

c. Aridity conditions

aa. In the early days

Mr. SCHUYLER WHITING, called as a witness for the plaintiff, testified in substance as follows:

July, August, and September were dry months of the year in the early days. (R. 174.)

Mr. LOUIS WOLDENBURG, called as a witness for the plaintiff, testified in substance as follows:

The water evaporates very fast in this country; it is one of its characteristics. (R. 752.)

5. In general

a. In early days

Major JOHN STAFFORD, called as a witness for the plaintiff, testified in substance as follows:

I came to and was stationed at Camp Harney in July, 1876; I remained there until the 15th of June, 1877, returned on September 1, 1877, and left there in June, 1878, approximately. (R. 1262–1263.)

During my service there at Camp Harney I had occasion to ride over the country in the immediate vicinity of that camp.

I have not been on the south side of Malheur Lake, but I have crossed Steen's Mountain three times, and I am familiar with the topography of the country between Steen's Mountain and the lakes (Malheur, Mud, and Harney Lakes). At that time I was a member of Troop "K," First Cavalry.

What is considered a day's march for a troop of cavalry depends upon the circumstances. If we are in no particular hurry, we first start out about 12 or 15 miles a day for the first day only, and then gradually increase it. The maximum distance for camps would largely depend on water, grass, and so forth. (R. 1263.)

Mr. BLACKMAR. Q. What I am referring to now is the country in and about between Steen's Mountain and the lakes, assuming a cavalry troop was not pushed for time, but was on the march, approximately how much ground would they cover in a day?

A. If they went out here to Steen's Mountain, there is no water, and you have to make the foot of the mountain. (R. 1264.)

I was never at a place called Rocky Ford on the Blitzen River. I was never directly south of the (Malheur) lake.

Mr. BLACKMAR. Q. But you were south of the lake when you moved up into Steen's Mountain?

A. We came up from the south, on the other side of Steen's Mountain, and crossed them.

Q. Well, in the character of the country around here, would you say that 25 miles was a good day's march for a troop of cavalry?

A. Yes, indeed; especially if it was in the summer, and hot. (R. 1264.)

So that unless the troop was on a special mission the distance of a day's march would hardly exceed 25 miles; never make over 25 miles if it could be avoided.

Whether or not the commanding officer would have to decrease the distance traveled in a day, after the troop had traveled in the field say for 30 or 60 days, would largely depend on how the horses had been handled and treated and fed and cared for. I have marched

much farther than that after I had been out for a month, but I had good horses. (R. 1265–1266.)

When we were feeding horses at Camp Harney we had grain. (R. 1266.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

My OO Ranch is on Silver Creek.

Mr. LILJEQVIST. Q. Now, Mr. Hanley, there is a historical record of a man traveling in a northwesterly direction and hitting Harney Lake, then he traveled in a circuitous route west, north, and west for twenty miles and came to what he called the Sylvailles River. Now, from your judgment of the country, Mr. Hanley, would it be possible for a man to strike Harney Lake, traveling in a circuitous route west and north and west twenty miles and striking the Sylvailles River, or what subsequently was known as the Silvies River?

A. Well, he would have to strike the Silvies River at what we term Hembree's slough, where that comes in now, about that part of the country, and then go across towards Wright's Point.

Q. In other words, to have struck the Silvies—assuming the Sylvailles and the Silvies is the same river—in twenty miles journey, he would have had to travel northeasterly to the Hembree place, and across the Narrows, and then north toward the Silvies River?

A. Where did he start from?

Q. Well, I am telling you the way he said he started. (R. 1389.)

A. That is what I want to know.

Q. This gentleman traveled, and hit Harney Lake—that is, he hit a salt lake. Now, this was the only salt lake there was, isn't that true? Isn't it a very strong salt lake?

A. Well, it would be a good deal according to what his judgment of a strong lake would be. He could get pretty strong water, you know, out of Malheur Lake, too.

The water of Malheur Lake was brackish. There is considerable difference between the waters of Harney and Malheur Lakes.

Mr. LILJEQVIST. Q. We will assume for the purpose of the question, and that will be determined here, that he struck Harney Lake. Now, he traveled west, and north and west twenty miles and struck the Sylvailles River. Now, would he do so from your knowledge and information in going around this country, if he traveled in a circuitous route twenty miles, strike the Sylvailles River? (R. 1390.)

A. If he was going west, and if he was on that side of the lake, it would seem to me that he was going away from the lake, Mr. Liljeqvist; he would have to be on the other side of the lake.

Q. Isn't it the chance that he hit some of the upper part of Silver Creek, or the head waters?

A. He wouldn't have to hit Silver Creek; he could go right up Silver Creek. I wouldn't say particularly that that would take him onto Silver Creek.

Q. Could a man on that course, and in that distance, ever hit the Sylvailles River?

A. No, not on that side of the lake. He would have had to be on the other side of the lake.

Q. West and north and west took him a long ways away from the Silvies River, didn't it?

A. Yes. He would have had to be on the east side of the lake. (R. 1391.)

Mr. GEORGE S. SIZEMORE, called as a witness for the plaintiff, testified in substance as follows:

Hines Mill is located at Warm Springs, about three miles south of town here (Burns, Oregon); it is not on the (Malheur) lake.

There are no tules to speak of around Hines Mill now, but when I came to the country (in 1886) (R. 1646) that was all tules down in that country.

When I came here the tules extended pretty well up the Silvies River, within two miles of town here (Burns, Oregon).

There were tules all over the country over there on the Blitzen River. This whole country, known as Potter's Town, was covered with tules east and south of Hines Mill; and north of Wright's Point was a big bunch of tules known as Potter's Swamp Field, with wild hay, when I came through. (R. 1654.)

Mr. CLARENCE W. DRINKWATER, called as a witness for the plaintiff, testified in substance as follows:

The salt grass that has been spoken of here is seen a good deal around on the high ridges; there was some salt grass on my father's place. There is salt grass over a good part of this county on the high ridges; salt grass is more or less over the entire part of the county, that I have been where there was water—not too much water. Whenever there is salt grass, it is an indication of alkali soil. (R. 1879.)

Mr. W. A. CAMPBELL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

There was good land all over this valley in places; it is very spotty. (R. 2247.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I know the Sagebrush Field in the Blitzen (River) country, and the McLaughlin Slough, and all that country (in the vicinity of those places).

Mr. LILJEQVIST. Q. Now, my interpretation may be wrong of this ancient line of travel, and I want to get your interpretation. If one of these Army officers came into the southeasterly part of Malheur Lake, and traveled south from a sluggish stream one-half a day, and then crossed on some brush and willows in a stream, and then started back toward the lake and followed another stream where a

thunderclap occurred; now, can you identify that from your own knowledge of that country?

A. I heard the reading of Dr. Clark's testimony into the record, and I have since read a copy of his testimony, and it must have been a crossing in the vicinity of Rocky Ford; that is, in the first instance; and then the second crossing would be crossing the McLaughlin Slough; that is, the west branch of the Blitzen River.

Q. Now, Judge, taking one of those other records, where he struck Harney Lake, or rather a slow stream, and then traveled west, north and west for twenty miles and crossed the Sylvailles River. Can you identify that?

A. Not as the Sylvailles River, Mr. Liljeqvist. Traveling (R. 2195) that distance and following the directions given by him, he would have crossed Silver Creek.

Mr. LILJEQVIST. Yes.

A. In my judgment. (R. 2196.)

6. Economic value of Lake Malheur Bird Reserve

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. Q. Now, Doctor, let me ask you this: Basing your answer, of course, upon your study and your experience which you have had, do you think that the establishment of a Bird Reserve has any economic value to this country?

A. Yes, sir, I certainly do.

Q. Now, just tell me what the value is in your opinion?

Mr. LILJEQVIST. Just a second. I am perfectly willing to have this matter gone into, but I think from the standpoint of title it is immaterial. It is a question of legislative policy rather than a question of a legal problem.

SPECIAL MASTER. Do you object to it, Mr. Liljeqvist? You can make that point in your argument just as well.

Mr. LILJEQVIST. Yes. I assume it should go in, except I do not want to concede it has any bearing upon the legal problems involved in this matter.

Mr. BLACKMAR. I do not agree with Mr. Liljeqvist on that point.

SPECIAL MASTER. I know.

A. Would you read that question to me, please?

(Thereupon the reporter read pending question as follows): "Q. Now, just tell me what the value is in your opinion?"

Mr. BLACKMAR (continuing). ——that is, the economic value?

A. I consider it a very great economic value, and one of the greatest that this State has. I am speaking now in a general (R. 1594) way of the wild life, and birds in particular; and for this part of the country, it is my opinion that it is the outstanding economic value of this part of the State, for this reason: We have very little to call people to this part of the State, or interest them in it, excepting those who are in business here, for anything other than wild life and

scenery; the wild life is so outstanding in its nature that it can not be reproduced elsewhere in the United States, and it is my belief that it will bring thousands and thousands of people here if this (Lake Malheur Bird) Reserve that I have seen, and others have seen, can be made available to the people that wish to see it; and it is my opinion that it will bring into this State more money than anything else in this part of the State.

Q. Now, directing your attention to the economic value of this (Lake Malheur) Bird Reserve outside of Harney County, what economic value has this Bird Reserve to the people at large in the United States?

A. I believe in the welfare of a family or of a nation, and that those things that they desire to see helps to make up their life, and it is of a very great value, and they ought to be afforded an opportunity to partake of those things for their own good and for their enjoyment; and as I said at the start, from my observation of what people want to see when they have a vacation and when they get away from their work, allowing that everybody has an occupation or is working, then they should have some time, and they should be afforded an opportunity to see such (R. 1595) a sight; and I am of the opinion that the people of the United States are governed by just such a thought as this in very great numbers, and they will (R. 1596) see it if they have the opportunity, so that they will benefit by it. They might put in their time at sometime less constructive, or less valuable. It will be helpful and enjoyable, and for that reason I will say it will be of a very great benefit to all the people of the United States, and to all these places, of which this is one.

Q. Doctor, do the wild fowl, that stop at this (Malheur) lake from time to time, come from other States in the United States, and from the Dominion of Canada?

A. Yes, sir; most all of them do.

Q. What particular species that rest on this (Malheur) lake, or stop at this (Malheur) lake, travel into the Dominion of Canada at some time during the season of the year.

A. Nearly all of them do. Of the outstanding birds of this part of the State, we have perhaps half a dozen; they are very, very few, but are migratory birds. From the way we are situated, all the migratory birds which make up the most of our bird life in this country, most all of them pass into Canada, the same as most of them pass into California and through south, so that we are in the line of this migration, and it is really the whole of our bird life.

Q. Just enter a few of the birds in the record that come into this Malheur Lake, or that did come in there when there was plenty of water, that at some time in their flight were on (R. 1596) their way into the Dominion of Canada.

A. The larger ones would be the swan; several of the heron family, the egrets, the cormorants, three species of the tern, the curlew, the glossy ibis, four varieties of geese, 12 varieties of ducks, plovers, stilts, and many of the small waders.

I left out one of the larger ones that I want to add: The sandhill crane, and the blue crane. Well, that perhaps would be representative.

That would not be half of the ones that come, but they are some of the outstanding ones.

Of the birds which I have enumerated, the geese and the ducks are our food birds, and the swan also has been in the past.

The killing of swans is restricted in most States. Some of these waders are on the list of nonkilling, like the snipe. All of them are edible birds, but most of them are restricted.

The flight of these birds is pretty well checked up by a system of banding. For several years there has been considerable banding; so that the flight of birds is pretty well established at the present time. (R. 1597.)

The pelicans get up into Canada. I overlooked those among several of the geese. Might I add that representatives of all these birds I have enumerated yet visit here; and they did even this season. Every bird I have enumerated I have seen this season in greatly restricted numbers, but they are yet attempting to make this their stopping place; and representatives of all those birds have been in this Reserve this season.

Mr. BLACKMAR. Q. Is this reserve (the Malheur Lake Bird Reservation) located in sort of a natural flightway, or runway, between Canada on the north and the wild water fowl grounds on the south?

A. For a good while I thought it was the only one in the United States; there were so many passing through there, I, in my ignorance, concluded that this must be the most important one, but afterwards, from reading, I learned that it was one of many lines of flight; but for this part of the West—west of the Rockies—I think we are in the main line of migratory passage of birds; and this lake (Malheur Lake) seems to have been one of their important stopping places and nesting places.

Q. I want you to elaborate a little bit on that, Doctor. Have the birds which you have mentioned nested in this locality, or did they nest here when you had plenty of water around Malheur Lake?

A. Part of them; part of these birds I mentioned never have nested here that there is any record of; but the most of them that I have mentioned do. (R. 1598.)

Q. The ducks and the geese have nested here?

A. Yes. One variety of geese only of the five I spoke of; the honker goose, as I call it, is the only one that nests in this valley; the swans do not nest here.

Q. On their return flight, which comes in the fall of the year, is it necessary for bird life that they have a resting place in the course of their flight?

A. They seem to think so, and it evidently is so, because they use it in very great numbers to gather food. There was an abundance of food about this place, and the natural kind of food that grew there, and which was washed up on the shores, and the birds fatten up on it, and they would get very fine flesh.

SPECIAL MASTER. Which is the return flight: From north to south, or from south to north?

Mr. BLACKMAR. Doctor, will you explain that, please?

A. We speak of it as the return flight because they have passed to the north in the springtime, going to their nesting grounds, and then when they return from the north, passing to California, or the south, or wherever they go, we speak of that as the return flight.

SPECIAL MASTER. Then they rest here in two different seasons?

A. Yes, sir.

Q. Now, which seasons do they rest here? When is the first resting of the birds here? (R. 1599.)

A. In the beginning of the year, which would be the spring, they come as soon as the ice is gone in the spring, they come from the southern part; they come here and stop and those that are going to nest remain over the season, and those that do not, go to their nesting grounds in the north. Some, like our snow goose, they go far south to make their nests.

Q. On their return, in what month do they rest here?

A. It is governed more by the condition of the snow. It is a stormy period that usually brings them in great numbers; they vary from one year to another, but in the fall, from the first of September to November, it varies, owing to the amount of snow; and at one time we thought it indicated the amount of snow we were going to have. They strike out in considerable numbers at (R. 1600) times.

Mr. BLACKMAR. Q. Will you give me an idea of how much time you spent around Malheur Lake in the past 30 years, and the different seasons of the year which you have been there?

A. Well, I would have to put it down, or measure it in days, weeks, or months, and then I would make a poor guess. First, I went to observe them often for pleasure or for knowledge, and I spent a great deal of time. I got permission, and decided to make a collection of bird eggs that were laid in this part of the country, and that took me out in the springtime, and I was a great deal of the time down there.

I also have enjoyed all my life shooting, and in the early days I spent at least two times, fall and spring, on a hunting (R. 1660) trip down into the (Malheur) lake. Then a little later, after it was made a Bird Reserve, I was placed as kind of a superintendent over the work that was done here for a number of years, and that took me there at all seasons of the year, so that I have put in a good deal of time on and about the lake ever since I came here. (R. 1601.)

Cross-examination:

Mr. LILJEQVIST. Q. In your answers in reference to the economic value of the lake and pupils coming to see it, do you mean that in order to see it they would have to get out on that lake?

A. Yes, sir.

Q. And the only way to get out in there would be in boats, wouldn't it?

A. Yes, sir. There are places that I never approached. This Pelican Island was a wonderful place to approach when there was water in the lake; the ground was hard, and you could take a team there; and there were places where you could take and see it fairly well, but in a general way you couldn't. The real way to see that lake would be to go down in a boat, and through all these channels, and these open places where there were tules, and you would see birds rising by the thousands from each open place. (R. 1634.)

Q. And throughout that entire western area (of Malheur Lake) there were places between these tule patches that would be covered with myriads of birds all the time?

A. Yes.

Q. And that is what you meant would be a great sight, and which would bring the people into the country?

A. Yes, sir. And also the nesting of the birds.

Q. And to afford them that particular attraction, isn't it true that the only way you could see that would be to go down in boats as we did in 1922?

A. That is the best way to do it.

Q. They would have to travel over it in boats to see that?

A. Yes.

Q. And there is no reason to believe, if this was assumed to be Government property, and that an opportunity to see those myriads of water fowl was made available, that a profitable enterprise could be conducted by charging for the use of boats into that area; isn't that correct?

A. I think it could be made profitable.

Mr. BLACKMAR. That is assuming that the Government would allow it.

Mr. LILJEQVIST. If the Government hadn't put this so-called (R. 1635) proclamation into effect, there isn't any reason at all why this couldn't be made a profitable enterprise by taking the public in and out of there to see that water fowl. Isn't that correct? (R. 1635.)

A. It might have been done, but it is my opinion that there wouldn't be any birds there now, or at any time after this if that proclamation hadn't been issued, because I have observed human nature.

Q. If the State would make that a Reserve, and not allow the public to shoot, the same enterprise could be carried out, couldn't it?

A. Yes, I think it could. (R. 1636.)

Q. Then since 1908, as I understand, about the only thing the Government has done was to claim title, and to keep people from shooting inside of this meander line?

A. Well, in a general way, yes. They haven't spent very much money, aside from paying the warden, and trying to retain the birds there. No effort has been made to make arrangements for people to see them. (R. 1640.)

Mr. EDMUND J. MARTIN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

We did not sell any of our birds (that we got when we went hunting in 1888.) (R. 1914–1916.) We had a quotation for swan down, which was worth from $10 to $14; we thought we were going to make some money, and so we killed those swans and pulled and plucked the feathers off in order to get the swan down.

SPECIAL MASTER. But it didn't happen?

A. No, it didn't happen.

Mr. LILJEQVIST. What was the market price at that time?

A. You see, they made a mistake. (R. 1926.)

Mr. JOHN W. HEINZ, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have sold the furs (that I trapped over on Malheur Lake) at different prices. I got all the way from 5 cents to $1 apiece for them. When we ran the motor boat, we would sometimes get as high as 75 (skins) a day.

The length of the season depended upon when it froze up. We would start along about the first of November and trap until it froze up, which would be from the 20th to the 25th of November. (R. 1949.) I believe it was in 1918 when we got $1 apiece for the skins), the last couple of years I think I trapped. The price before that would run from 50 cents—the highest ones run from 30 to 50 cents; some of them were down to 5 cents, those were the young kittens.

There were different prices in different years. When we first started trapping before we got the boat, we only got 15 cents apiece for them (the skins), for the best ones; then we ran from that up, and they got to getting worth more; they were more in style; they got to running up to as high as one dollar apiece for the best ones. It is hard telling what the average year was. (R. 1950.)

The greatest number of them (the skins) that I took in one year was about 1,500; that was in 1918.

SPECIAL MASTER. What you gentlemen really want to know is what Mr. Heinz's income was, and you haven't the temerity to ask it. (R. 1951.)

After 1918, it (Malheur Lake) dried up; they would not allow us to trap; they would not give us permits to trap. We had to have permits to trap on this (Malheur) lake and they would not give them to us.

Mr. LILJEQVIST. Q. If the water goes down, do you think the muskrats will come back?

A. I think they will. (R. 1951.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, testified in substance as follows:

In August, 1912, I made my first visit to Malheur Lake to study and list the birds and mammals found there at that time. I was

accompanied there with William L. Finley, of Portland, Oregon, and Dallas Lore Sharp.

At that time, Mr. Finley was State Game Warden; he also represented the National Association of Audubon Societies at that time. He was also a member of the American Ornithologist Union, and the Cooper's Ornithologist Club of California. Mr. Finley is one of the leading men in his line in the United States.

Mr. Dallas Lore Sharp, I believe, was professor of English literature at Hingham, Mass., and an author on outdoor subjects. He had written at that time at least two books on wild life.

As near as I can remember, I was at Malheur and Harney Lakes approximately two weeks at that time (in 1912). (R. 1993.) We hired an automobile at Burns, Oregon, and drove to the Narrows, making the hotel at the Narrows our headquarters. From there, side trips were made to the Blitzen River, to the Sodhouse Spring, and down the Blitzen River to where it fanned out into what was called Malheur Lake proper; side trips were also made to Harney Lake around the south and west shores of it, as far as Silver Lake, on Silver Creek; and on out on islands down there to study the breeding birds. We used a boat just to make the trip down the Blitzen River. (R. 1994.)

Mr. BLACKMAR. Q. Some of the birds that you enumerated at that time, are they birds which at some time in their flight go into the Dominion of Canada?

A. A great many of them. Those that migrate from the southern wintering grounds of Mexico go into Canada, such as a great many species of the ducks, the shore birds, including the killdeer, the Wilson snipe, western willets, are ones that go north into Canada; two species of gulls; one species of tern—change that to two species of tern, bitterns, coots, phalaropes, and a great variety of shore birds and swamp birds and song birds. (R. 1994.)

I have some familiarity with the treaty of Great Britain with reference to the protection of migratory birds. The birds that I have enumerated come within the terms of that treaty.

Mr. BLACKMAR. Q. In addition to the birds that you have enumerated, are there also some geese and swan that come within that treaty?

A. There are a great many. The Canada goose, the one that nests here, and the only one found during the summer months, goes into Canada during the fall and spring; there are other species of geese, such as Hutchinson goose and white-fronted goose, that breed in the high north, and pass through here, stopping at Malheur and Harney Lakes during the fall and spring migration; they stop and feed here in great numbers.

On the trip that I made, in 1912, we did not go to Cole Island or Pelican Island.

Since my trip in 1912, I have visited the lake (Lake Malheur Bird Reserve). Since 1912, I think I visited Malheur and Harney Lakes every year except with the possibility of 1914. (R. 1995.) I visited

there nearly every month in the year. I have made more trips during May and July, and possibly October and November than at any other period of the year; but I have been here in midwinter and also in midsummer.

I have made professional observations on practically every trip, and possibly every trip. In my official capacity, the result of my observations were reported to the heads of my department; and every one of the trips that I have made have been in pursuance to my professional employment. (R. 1996.)

In the so-called open water, west of Cole Island, there were masses of aquatic vegetation. One characteristic water plant is known as the sago pond weed, which is very abundant, and I believe it grows during the late part of the summer, and it grows over every bit of that so-called open water. The sago pond weed has a small, dark, hard, shiny seed on it (R. 1997), which is one of the most important food plants that occurs in Malheur Lake for water fowl (R. 1998).

Certain species of birds used to frequent Harney Lake in great numbers; the species included the pelicans; avocets (R. 2001); stilts; killdeer; and whether or not Silver Lake is a part of old Harney Lake, I couldn't say, but in 1912 there was a colony of egrets; and in fact the most northerly nesting egrets ever known were nesting at Silver Lake that year. I could not say how far Silver Lake is from Harney Lake. We drove around there in a wagon, and I was so much interested in the wild life, that I do not recall the miles traveled. Silver Lake is over by the OO (Ranch); it is an expansion of Silver Creek before it flows into Harney Lake proper. (R. 2002.) It is about two miles from the shore of Harney Lake. The country was all flooded. Apparently the insect food there attracted a great number of birds.

At that time, we saw no fish (in Harney Lake), although there could have been fish out in the (Harney) lake from the number of pelicans that fed down there up until recent years, which would indicate quite a fish population. That fish is known as the chub, characteristic of alkaline lakes. It has no food value to humans, but has a high food value for certain birds. A chub is between a perch and a sucker, but it has not the sucker mouth.

Mr. BLACKMAR. Q. Do you regard the development of a Bird Reservation as having any economic value to the people of the United States?

A. I do; it has great economic value. (R. 2002.)

Q. Wherein is the economic value, as you see it?

A. From the food value. Wild life has since the beginning of time produced a great quantity of food for human beings; from an (R. 2003) educational and recreational viewpoint, probably greater. The American people are growing more and more outdoor-minded, and the preservation of our wild life will mean the expending of great sums of money by people who can visit areas where large quantities of wild life are found; properly conducted nesting areas or breeding grounds furnish a supply of game life that spread out

fan-wise over great areas, which produces recreation and support for a great number of people; through banding operations, birds, hatched in this district have been taken as far east as Great Salt Lake, and south to the Southern States, and west to the Pacific Ocean.

Q. Over what period of time has the Government employed game wardens at the Malheur Lake Bird Reservation?

A. The first warden that I know of was a man by the name of Fawcett, stationed at the Narrows in 1912. Just how long he had been there I couldn't say, but under that Game Commission not over eighteen months; and there have been wardens either stationed at or near the lake continuously since then.

Cross-examination:

Malheur Lake in 1912 produced a large revenue through muskrats and other fur pelts.

Mr. LILJEQVIST. Q. Now, do you know in any year since the Government has permitted trapping the amount in revenue that has been derived from muskrats taken off the lake?

A. During the winter of 1913 and 1914 I saw reports from two trappers to the effect they had taken 4,400 muskrats that year. That was the only record that I have personally seen.

In 1912 I would guess those skins would be worth on an average of 50 cents. The market fluctuates a great deal.

Trapping has been permitted there for a few years since then. Not many years has trapping been permitted on Malheur Lake on account of the decrease of fur-bearing animals.

I have no record that any one year there was $20,000 taken off in revenue. (R. 2004.)

Mr. WILLIAM L. FINLEY, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with the (Lake Malheur) Bird Reservation in Harney County. I went there with Mr. Herman T. Bohlman in 1908 with the idea of making a survey of the lake from the bird and animal standpoint. The reason for the trip at that time was that a great many birds, especially grebes, the western grebes, and white herons, were killed in the breeding season by plume hunters, and the species, we thought, were being exterminated here. We wanted to stop the killing of these birds during the breeding season, from the standpoint of protection.

The survey we made at that time covered a period of about two months. We got a boat and put in our provisions and were out exploring the various parts of the lake three different trips, staying out each trip from four days to eight days. After making (R. 2298) that exploration we were in touch with both the Oregon Audubon Society and the National Association of Audubon Societies—in making this exploration, and after that reports were sent in. President Roosevelt was greatly interested in the conservation of wild life, and on our reports he issued a special executive proclamation setting aside that area as a Federal wild bird refuge.

We left here in May and were down there during the latter part of May, June, and returned the first part of July.

We had just a small flat bottom rowboat that we got from a fellow named Bill Marshall who lived at the mouth of the Blitzen River just down near the edge of the (Malheur) lake. (R. 2299.)

Since 1908, I have made several trips to Malheur Lake. Without my notes, I do not know that I can recall the exact years. I was down there with Dallas Lore Sharp from Boston in 1912; then I have been down there in the fall of 1917, and saw the swans in large numbers. I went down there with Lewis, I think about 1915. I have not been there recently. (R. 2303.)

I have given a great deal of study to the economic value to the country at large of maintaining these Bird Refuges.

In the first place, the primary economic value; it might be said that we feel that all creatures of the out-doors, natural history as a whole, is bound up in a sort of system of checks and balances, each creature having its own place; and we feel to eliminate one or two here you immediately make some difference in the whole realm of natural history; and we feel that as a rule most of these creatures have some economic status.

Now to come down to the real value of an area of this kind, it perhaps has several values. It protects the wild life. At that time there were a great many muskrats, living; in fact, we camped one day on a muskrat house there (in Malheur Lake); could find no other place; were a good many living all through that region, and of course, from the standpoint of furbearing animals, there was quite a bit of fur produced through that area. One trip we were down there a fellow—I have forgotten whether Marshall—someone living there at his place—had just (R. 2304) in a few trips trapped about a thousand muskrats out on the lake; and it had produced a good many muskrats.

Now from a bird standpoint, there were vast numbers of ducks of various kinds, geese, and shore birds, or wading birds, nesting all through that area. I remember cruising over in one section of the lake and counting over fifteen hundred Canadian geese or honkers swimming about, that is, these were old and young, just in that one area; and there were undoubtedly thousands of geese produced there.

From a food standpoint the value of a goose is worth a certain amount. I saw great numbers of ducks, mallards, pintails, teal, redheads, and others, nesting on the (Malheur) lake. If you take it purely from a meat or food standpoint, there was considerable value as a breeding ground.

Then there is another very valuable viewpoint. To me that (Lake Malheur Bird Reservation) was always a vast outdoor museum of great value to people as a whole. There were birds nesting there that I found nesting in no other place in the State (of Oregon), like the white faced glossy ibis, and of course the white heron formerly nested there; not so many at that particular time. And

it (Lake Malheur Bird Reservation) was undoubtedly at that time the (R. 2305) largest wild-fowl refuge in the United States, the production of various kinds of birds, and numbers of birds; we have photographs showing thousands of birds in a single picture about these colonies.

Now, from a purely esthetic standpoint it had a large value as an unusual outdoor resort for birds and animal life.

With reference to the recreation features of duck hunting as of economic value to the people of the country, I regard it a very important economic value because in the advance of civilization people in the cities are more tied up in business life, and unless we have recreation and things to get people out of doors, hunting and fishing, I feel that it would be a great detriment to civilization as we know it. In other words, hunting is very valuable sport in getting people out in the open, and it has a lot more value from that standpoint than the pure amount of food that it produces, although that has great importance, and this area was of great importance to many of the residents. They used the food products of that area to a large extent during the season of the year.

Mr. BLACKMAR. Q. The (Malheur) lake at present time is going through one of the dry cycles, and the water is very low. With a return of the normal precipitation will the birds in large numbers again return to this lake?

A. They will if water returns to the lake. They are very quick to take advantage of places where they really receive protection. Now, this is very important in the conservation of bird life. These large showy birds, some of them, like the pelicans and others, can not nest in an area except where they are, you might say, in an island where they are surrounded by water, because creatures disturb them a great deal, for instance, coyotes, or people visiting a place, and they soon leave it. It is very important to have an area of this kind. Birds undoubtedly decreased in numbers because of the drying up of the (Malheur) lake, or perhaps have scattered to other places, if (R. 2306) they could find places; in fact, they have gone in to breed nearer where people live, but in turn they are disturbed a great deal, and they can not exist continually in a place of that kind. But if water returns to that area bird life will soon center there again, and, in my opinion, that could again be made one of the greatest wild-fowl refuges in the United States.

Q. Is it (Lake Malheur Bird Reservation) strategically located so that the birds are attracted there on their migration from south to north, and from north to south?

A. Yes; it is in the line of migratory flight from the north or Alaska tundra, to the south, Mexico. The swan and white geese come in there in the fall in great numbers, and feed there for two or three weeks. Swan will settle in, and feed on the roots of these tules, and then move on south. Now, in the conservation of these large, showy birds and rare birds of the country it is of vital importance that we have both nesting areas and feeding areas in the line

of migratory flight. We are in treaty with Canada to protect migratory birds. We can not protect these birds unless we have some places where they can live and feed. It is just as important to have feeding grounds during the migratory season, and nesting places for birds, as to have nesting areas where they can hatch their young. Without areas of this kind birds are simply going to be exterminated, you can't prevent it; birds that I consider of great value to the country will be blotted out unless an area of this kind is maintained. (R. 2307.)

(No cross-examination.)

7. Malheur Gap

a. In the early days

Mr. 'Armstead Ellsworth Brown, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. Liljeqvist. Q. I do not suppose you have seen water go through Malheur Gap since you have been here, have you?

A. No, sir; it never has. (R 2179.)

Mr. Louie T. Jessup, witness called by the plaintiff, having qualified as a civil and hydraulic engineer in the Division of Agricultural Engineering, United States Department of Agriculture since 1913, on cross-examination testified in substance as follows:

Mr. Liljeqvist. Q. When it (the water) got to this 4,106, it would nearly flow out Malheur Gap, wouldn't it?

A. Well, it would be approaching close, but I don't believe it would quite flow out at that elevation.

Special Master. That system would tend to confirm the conviction that it was applied accurately to the areas involved in lower levels, would it? In other words, the higher you got the water, of course, the more area would be involved.

A. Quite true, your honor.

Special Master. And if you got it up high enough it would cover the area which was traversed by Noah's Ark.

A. Yes.

Mr. Liljeqvist. That is probably where it went down the Malheur River. (R. 2467.)

Q. Boats, Boating

EVIDENCE RELATING TO

1. Malheur Lake

a. In General

Mr. Schuyler Whiting, called as a witness for the plaintiff, testified in substance as follows:

I have never been on Malheur Lake in a boat and I do not remember ever having seen any boats on the lake, or at the Narrows. (R. 181.)

Mr. THOMAS GEORGE HOWARD, called as a witness for the plaintiff, testified in substance as follows:

When I was about twenty years old (R. 219) (about 1891), I went with two other men duck and goose hunting in July or August—it was haying time—in a small flat-bottom homemade rowboat, out where it was considerably like a lake, I do not know whether you would call it Malheur Lake proper; there are tule beds and islands all through it, but you can go with a small boat. (R. 217–218.) We put the boat in the water on the main Silvies River just a little above Lawen, and we went down the river toward Malheur Lake into the tules. We never got clear through the tules at any time; they grew pretty close together; there was an open space, and then more open water, and then more tules. (R. 218.)

I hardly think that we could have gotten that boat into the lake from where we started if we had not gone down the river or slough. Away from the slough or river the slope is very gradual. At the edge of the water it would be an inch or two deep (R. 219) and you would have to get out a quarter of a mile anyhow from the bank to where we started in, to obtain about a foot of water. (R. 219–220.)

We made only the one trip in a boat. We went duck hunting from time to time after that but we did not go out in a boat. It was easier to go duck hunting without taking a boat. We had to drag the boat a good deal of the time coming back on that trip I have related, and we got lost, and could not find the channel back; we had to drag the boat a considerable distance across the high places to get it back. The depth of the water in some places when we were going out was not as much as six or eight inches; it was very shallow in some places. (R. 220.)

Cross-examination:

You could not take a boat right at Saddle Butte and go across the lake. At ordinary normal high water you could go out a short distance from Saddle Butte and then you could go in a boat and get across to the south side of Malheur Lake. (R. 227.)

When I talked about starting out at Lawen with a boat and going through tules, I did not know whether we were going through tules on the old patented lands before we got to the lake or whether we were in the lake proper. (R. 229.)

Redirect examination:

We put our boat in the water above Lawen where we were haying, about a mile and a half west, not toward the lake. (R. 233.)

Mr. THOMAS J. VICKERS, called as a witness for the plaintiff, testified in substance as follows:

I have never been on Malheur Lake in a boat. In connection with cutting hay down on the lake I have loaded the mower into a scow. (R. 245). The scow was eight or nine feet long and four or five feet wide; big enough to get a mowing machine in it. The scow was made of heavy boards and planks, nothing in particular, with

sides four or five inches high; or something like that. We would put the scow in the water southwest of the oil well at what is called Swan Lake, south and west of Wright's Point. (The oil well is in Lot 8, Section 5, T. 26 S., R. 32 E., north of the lake. Swan Lake is between Lots 11 and 12, Section 4, T. 26 S., R. 32 E., north of the lake.) We used a team of horses for a motor. (R. 246–247.) I have never taken the scow out into the lake at all, just pulled it across those sloughs there. There is no lake in there. We started at the oil well, but loaded in next to the tules. I have taken it out into the tules three miles, but we were on the ground the biggest part of the time; had to float it a little while and then pull it when it struck the ground. We were cutting sugar grass, wire grass, and a little salt grass. Sugar grass does not grow on higher ground than salt grass. (R. 247–248.) This hay that we were cutting was on islands across the first channel. You go to one island and then you go to another one. This was in 1917. That was the only time we ever needed to use a scow. (R. 248.)

I am familiar with the Vickers house (R. 248). (The house is located about eight inches on the map, Plaintiff's Exhibit 3, south of the Neal meander corner of Sections 3 and 4, T. 26 S., R. 32 E., north of the lake.) (R. 249.) We were operating the scow in the tules from the Vickers house. I pulled it right up to the house on the ground; there was a lake there, but we did not put it on that lake. (R. 248.) We pulled it the other way. (R. 249.) There was a patch of tules south of the Vickers house, in fact there are a good many tules surrounding it. (R. 249.)

Cross-examination:

I have never seen any boats on Malheur Lake floating about. (R. 263.) But I have seen one or two little skiffs that would float in the water and hold two men, that was used for hunting, or going into these little islands where they had a little home or something like that. (R. 262.) They did not use them to go to work with but to get into these little places with. I never saw any boats, only this little boat, that amounted to nothing; but I never saw any on the lake, to tell you the truth about it, that is floating about. (R. 263.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

We would go with boats in the water time trapping; sometimes the water was six inches, sometimes three or four feet; you could tell by putting your oar down in the water and mud. We had gum boots, and pulled our boats over some of the places. Can not tell how much mud there is, you might have a foot and a half mud and water. I generally made an oar eight feet long and would just stick it down half way and there would be mud and water on the oar. Lots of times we got out and pulled this boat in about an inch to four inches of water, in high places. (R. 267–268.)

I have been down in the western end of Malheur Lake trapping in a boat, and I have been in there when it was dry and could not run a boat. I had the same experience in getting a boat through there as I have related in trapping at other parts of the lake. (R. 269.)

In all my boat experience in Malheur Lake, I have only had one boat. At the time I was in there, there were some other fellows around (R. 279) there hunting in boats. I have seen a couple or three or four boats in Malheur Lake. In those tules, dodging around, you would not see a boat for two or three days, then all of a sudden, one or two would pop up. (R. 280.)

Cross-examination:

There were birds and wild game in by Holland's, and we would get in a boat and go down an open channel. There would be openings there, and then the tules, and then you came to a place that you had to push your boat to get across and then get into another opening. (R. 295–296.)

Mr. WILL Y. KING, called as a witness for the plaintiff, testified in substance as follows:

I was out in a boat in Malheur Lake once. I put the boat in at the Narrows at old man Hembree's place and we rode up into the tules hunting for duck eggs. There was not much water or current running through the Narrows at the time. We just used a pole to push our boat around with and gathered a few eggs. I have not made any other trips in there in a boat, and I have not seen any boats on Malheur Lake except that one that we used (R. 306–307), it belonged to Mr. Hembree. It was just a small homemade flat-bottomed skiff. We used a pole. In poling I do not remember that we had any trouble about reaching hard bottom, but don't think we had any trouble pulling the boat out. (R. 307.)

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, testified in substance as follows:

I have never seen a boat down there on Malheur Lake. I saw one little skiff at the Narrows bridge, and that was the only thing I have ever seen on that lake in my whole time here, and I have been here in all times of the year, too. (R. 466.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, testified in substance as follows:

I never tried to operate a boat on Malheur Lake, and I am not a hunter. (R. 512.)

Cross-examination:

I never was in a boat on Malheur Lake at all; I have seen a boat at the Narrows and one at Springer's.

Mr. LILJEQVIST. Q. Do you remember a man by the name of Hardisty who went around the lake in a boat?

A. No.

I have never seen any gasoline boat on Malheur Lake. (R. 528–529.)

Mr. TOBIAS STILLEY RIDDLE, called as a witness for the plaintiff, testified in substance as follows:

I have never seen a boat on Malheur Lake. (R. 540.)

Mr. GEORGE E. WHITING, called as a witness for the plaintiff, testified in substance as follows:

At one time early in the spring shortly after the ice broke up I was clear out in Malheur Lake riding in a boat (R. 552–553); it was a skiff—rowboat (R. 553), a flat-bottomed homemade affair; we used oars and poles (R. 554). I can not tell just exactly the place we went to, but it was in the north side of Malheur Lake, this side of the Narrows. There was a party there—about a forty-second cousin of mine by the name of Adams, and I was down there. We had taken a house on a wagon and moved it from Burns down there before the ground thawed out; it would freeze up enough nights to carry the wagon, and that was the time I went around there in a boat. He (Adams) rode around there in the tules, visiting neighbors out on those islands; there were tules there, and I thought what could a man do sticking around, just where he had building room on those places just like a rat.

The islands where we visited these people were located north and west of the Sodhouse, and across the (Malheur) lake on the other side, east and west of where the Narrows is to-day. (R. 553.)

I suppose there were a good many islands there; there were a number of promontories, where the water was all around them at that time, and where these people had their houses. There was salt grass on those high places. It was not customary at that time to cut the grass for hay, because it was a new settlement; but in years after I suppose they cut the grass for hay but I wasn't so familiar with it after that. (R. 554.)

At the time I was in there with this boat I do not think anyone had to get out and drag it around by hand. When we got to the tules we would part them and pull through. (R. 555.)

Cross-examination:

Mr. LILJEQVIST. Q. Well, those settlers in there (Malheur Lake) had boats, didn't they?

A. I wouldn't say that.

Q. Didn't you testify that all of those settlers had boats there in the spring of the year?

A. No, sir.

Q. Didn't you testify to that in your statements to the Government?

A. I don't think I did. (R. 568.)

Mr. LILJEQVIST. Q. Let me refresh your recollection. Here is a copy of your statement that the Government has given me. Did you make an error or is that statement correct?

A. Is this the testimony that I have given here to-day?

Mr. LILJEQVIST. No; it is the testimony that you have given to the Government.

SPECIAL MASTER. Were those statements sworn to, Mr. Liljeqvist?

Mr. LILJEQVIST. Yes.

Q. They swore you to that statement, didn't they?

Mr. BLACKMAR. What page are you referring to?

Mr. LILJEQVIST. On page 6: "If you had a boat would you have tried to go across?"

"A. I wouldn't undertake to say, because we didn't have any opportunity to observe that. All of those settlers had boats there in the spring of the year."

Q. Is that statement correct, or isn't that correct?

A. I probably said it.

Q. Well, did you make an error?

A. I find here, in reading this statement over, a good many statements that I didn't make. They might have understood them that way, but I do not believe I made some of these statements just as they are written down here.

Mr. LILJEQVIST. Stenographers sometimes make errors, but all we are trying to get is the fact and the truth in this case. (R. 569.)

A. And that is what I am trying to give you.

Q. Did the settlers have boats there?

A. If I made that statement, why, I made it, and that is all there is to it; but I don't believe that I should have said so, because I don't know.

SPECIAL MASTER. Is it your present recollection that there was a boat there, or more boats?

A. There was one boat there according to my present recollection.

SPECIAL MASTER, Q. And no other?

A. I wouldn't undertake to say.

SPECIAL MASTER. You didn't see any others, according to your present recollection?

A. No, sir. (R. 570.)

Mr. JAMES THOMAS BAKER, called as a witness for the plaintiff, testified in substance as follows:

I have never operated a boat on Malheur Lake. One time I think I saw a little homemade flat bottom rowboat down there. (R. 579.)

Mr. EMIL BAKER, called as a witness for the plaintiff, testified in substance as follows:

I have never used a boat on Malheur Lake. I have seen Mr. Benson, the Game Warden, down there in his boat. He offered several times to take me for a ride in that boat, but I never went with him. I was not acquainted with Mr. Benson before he went to work for the Biological Survey. (R. 594.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I do not think people used boats very much to hunt with on Malheur Lake. (R. 636.)

Mr. JOHN H. WITZEL, called as a witness for the plaintiff, testified in substance as follows:

I went out to Pelican Island in a little homemade flat bottom skiff, or boat. It belonged to Dick or Tom Haines; we were going hunting. I never did ride out to Pelican Island or take any stock out there. (R. 1107.)

Cross-examination:

I never went out on a boat anywhere, only out there on what they call Pelican Island. (R. 1120.)

Mr. EDWARD ANDERSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never used a boat. (R. 1290.)

Mr. JOHN W. BIGGS, called as a witness for the plaintiff, testified in substance as follows:

I can recall three different times at three different places that I went duck hunting in a boat. Two of the boats I used were homemade wooden boats. The other was a canvas boat, it was brought in by some parties from Baker, Oregon.

We went down to about the Adam George place and went out, and they had a canvas boat. Where I was, in all three places there, there was a good channel right where we went in. I do not know, but we might have pushed the boat for a few feet to get in it, but there was a good channel. After we got into the tules we went out into the open water; we rowed around through channels principally. The only time I was really into very much open water was there just south of Saddle Butte. We were quite a little ways into open water then. We went kind of through a slough that I think was quite deep between a point and Pelican Island, and then moved (R. 1495) on out into the open water from there. (R. 1496.)

Mr. ORIN EUGENE THOMPSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have not been over the (Malheur) lake in a row boat; I have been out to Pelican Island in a boat.

I did not do any trapping on the (Malheur) lake. (R. 1513.)

Mr. JAMES J. DONEGAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never been out in that (Malheur) lake in a boat in my life. (R. 1536.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never got in a boat at the Narrows and went up to Malheur Lake, or came down, either one. I have tried to come down once, and got in the tules so bad that I could not find any good way of coming, and I gave it up. I tried to go down on skates, but the tules lopped in. I did not find any waterway that could take my boat along. I couldn't tell you when it was that I attempted to find the channel. I got in innumerable sloughs that petered out; if there was an open waterway I did not find it. (R. 1630.)

Mr. GEORGE S. SEEMORE, called as a witness for the plaintiff, testified in substance as follows:

I have been in boats hunting; I never had much success with a boat; I either had to push or pull it; it wasn't much of a pleasure with a boat down there (in Malheur Lake) where I was hunting. (R. 1647.)

Cross-examination:

I have seen a lot of trapping in there (Malheur Lake). (R. 1661.) There were three or four fellows who worked in there; the two Weir boys, brothers, trapped over the lake for years, and a man by the name of Granville Hardisty. Granville Hardisty trapped there for years, and I suppose ran over that lake with a boat more than any man ever has. He is in the vicinity of Lakeview now.

Some of those boys had a sail on the boat, but I do not know whether it was Hardisty or the Weir boys. (R. 1662.)

Mr. JAMES A. TURNER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have been out in Malheur Lake in a boat, but not to the place that I lived on for a year and a half. I went out there in the fall, and drove in with a wagon and team. (R. 1734.)

Mr. ALFRED L. MARSHALL, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never seen Mr. Benson (the Game Warden) go around in his boat north of the south part of where that grain field (by my place within the Neal meander line), because it is too shallow for him to go in there with it.

I have seen him get in there to the right of my place where the water goes down. (R. 2086.)

b. 1870–1880

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never had time to go out into the center of Malheur Lake in a boat. I have never been out in Malheur Lake on a sail boat, or in a boat with an outboard motor.

I never saw a man named Hardisty have a sail boat out there. When I saw a fellow in a boat, I knew he was out for something, and I was not much interested in that. (R. 1385.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

On June 1, 1876, when I went with Captain (Major) Bendire to Malheur Lake for the purpose of getting eggs, we had a boat which was staked pretty near to what is the mouth of this Malheur Slough; I would not say the exact spot, but he had constructed it at Harney (Fort Harney) before that and had it taken down; it was a small flat bottom boat with a couple of short crude oars. From the mouth of Malheur Slough we went along Pelican Island for probably a mile (R. 1781) or maybe a mile and a half. That is where he found some eggs, which he selected and gathered. He was looking for the eggs of strange birds.

Between Malheur Slough and Pelican Island we had enough water to float the boat.

I had some experience with a boat when I was a boy back in Ireland, but not a great deal. (R. 1782.)

c. 1880–1890

Mr. MARTIN ANDERSON LUCAS, called as a witness for the plaintiff, testified in substance as follows:

In the early eighties (R. 426) I went hunting geese and duck around Malheur Lake. I could not tell just what year it was. I did not keep a practice in keeping dates in those days, but I know I was in there. The first time we came in, we went through Harney City, down to the lake to the lower end of the lake, and we were acquainted with some of the boys there at Harney City who owned a boat that was down on the lake, and we asked them for the use of it to go out on the lake to get some birds. It was a homemade flat bottom wooden boat. You might call it a mud scow. (R. 419.) We hunted around the lower end of Malheur Lake toward Saddle Butte. We used paddles. We found the boat pulled out of the water on to the bank of the lake when we got there. All we had to do was to shove it into the water; two of the men got into it and went off on the lake. There was a slough there where the boat was, and there was an island across on the other side. There was water, I should judge, about a foot and a half or two feet deep in the slough. They went through the slough into the main lake and came up this way. I never got in the boat. I did my hunting right along the edge of the lake. The tules were awfully thick in every direction from where I stood there at that slough. (R. 420–421.) There were places there where we would go out to where the birds would fly through, and we called them "fly-ways." The water came (R. 421) up to the tules in places and in some places there was not any water. This was in the fall of the year. We camped at that place at

Saddle Butte for two nights; when we got through we went around to the south side of Malheur Lake to the Narrows on wagons and pack animals. Along the road to the Narrows, we saw tules in the lake. In a lot of places you could not see the lake on account of the tules. (R. 421–422.) When we got down to the Narrows we did not see much water there. There was a little under the bridge but not very much. I should judge its width would be six or eight feet where the water run. (R. 422.)

Mr. GRANT THOMPSON, called as a witness for the plaintiff, testified in substance as follows:

I have never tried to operate a boat on Malheur Lake and I have never done any hunting there. (R. 714.)

Cross-examination:

Mr. LILJEQVIST. Q. Now, you saw a large number of other persons that were operating boats on the lake, didn't you?

A. No; I couldn't say that I have. I have heard them tell about being out there hunting.

I know nothing about trapping except by hearsay. I have never seen anyone trapping from boats.

Mr. LILJEQVIST. Q. In general hearsay, you heard that they were using boats and that they were trapping?

A. Yes; some of them did. (R. 714.)

Mr. CLARENCE THOMAS CAREY, called as a witness for the plaintiff, testified in substance as follows:

I have seen two or three rowboats on Malheur Lake (R. 763); I suppose they were used by hunters and sportsmen.

I was out once myself in a small boat together with two or three others. We dragged the boat out into the water where we could float it; then once in a while we would run into the mud and have to push off again. (R. 764.)

Mr. ROBERT J. MCKINNON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have seen boats sitting there on the south side of Malheur Lake right there by the Narrows; I have not seen them in the upper part, or eastern part of Malheur Lake. I don't know what they used the boat for at the Narrows, but I don't think they used it to haul people across. (R. 815.)

Mr. JOHN EDWARD LOGGAN, called as a witness for the plaintiff, testified in substance as follows:

In the early days, I have been hunting down there (in Malheur Lake). The next few years after I first came here, we used to go down there hunting. I think the first time I was down in that country was in 1887 or 1888. (R. 1475.)

The first year that I went in there for the purpose of hunting was about 1887 or 1888. The first year I went down there I used a boat,

which was in the Silvies River, I imagine near what is known as the Adam George place. There was someone else with me on that occasion. It was a small homemade rowboat, but it didn't belong to us. We used oars and we went out so that we were on the lake. You could see out on the lake. (R. 1476.) We did not go into the lake very far; because it was a hard matter to get back, to get your channel to go back the way you went out.

We would just go down that channel, and we were hunting, and would probably go down a ways and find a tule nest or a bank of tules; one or two of us got on it, and the other fellows drifted around and there were channels and tules all through that country; in those days there were not any banks; everything was tules; only right on the river, and we kept along these tules and never got much outside of the tules. We went out far enough in the tules so that we could see open water in the center of the lake.

After we got out of the channel, as I remember it, it was all tules for a long ways out, although there would be channels; there would be a little bunch of tules there, and a little bunch of tules here, and you would work out through there, maybe some would be more on a channel than others; that is, more defined channels than others. (R. 1477.)

I can recall the water down there was not so very deep; I never measured it for any purpose to find out; I know we could always find bottom with an oar, possibly two or three feet. We had enough water to float our boat. I do not recall that we had any occasion to get out and pull it along. It was pretty hard to find our way back through the tules; you had to be careful; you could get back, but you might have a lot of trouble through the tules and over those tule banks.

After the first time we went down there when we lived at Harney at that time, we used to go down there nearly every spring for several years, four or five years; not always at the same place, and I think we used a boat on those occasions. (R. 1478.)

I think that we generally went to the same place, or about that place; but we would go in different directions. I remember once we did get out on the (Malheur) lake and the channels seemed to be more defined. We got clear out to the open water.

I never did row clear across the (Malheur) lake.

When I was in there with a boat, I do not recall ever seeing any other boats.

The hunting I did down there was purely for sport; no commercial shooting or anything of that kind. (R. 1479.)

Mr. GEORGE MARSHALL, called as a witness for the plaintiff, on recross-examination testified in substance as follows:

I have been out on the (Malheur) lake in a boat. I and three other fellows put a boat in at the big springs there, and got that boat down that Spring Branch and off into that lake; we went towards Saddle Butte, as far as we could go with it, and then went

down toward Pelican Island as far as we could go, and then came back to the mouth of the Spring Branch, and out. (R. 1703.)

Mr. EDMUND J. MARTIN, called as a witness for the plaintiff, testified in substance as follows:

I was down around Malheur Lake hunting and shooting swan in the early spring of 1888, it must have been as early as March (R. 1921), as near as I can find out, with ice still in the lake. (R. 1915.) I thought it was earlier than that; I have been enquiring, and Mr. George Sizemore says he came here (to Harney Valley) that year, and we had just come up there where the swan pelts were. (R. 1914.)

That time we had a flat-bottom boat which we built; it was three or four feet wide, good and solid, so that it would slide around in shallow water. Most of the time we just had a pair of oars, and propelled the boat that way; but then if we had a fair wind with us, we had a sail. We sailed along through the open waters; we didn't use the sail when we got down to the shallow parts of the (Malheur) lake; if we had done so, when we came to a bunch of tules, we might have been swamped.

I remember on that hunting trip I got into the water when I first launched the boat (R. 1915), which was just north of Pelican Island. There was a peninsula or a ridge that runs in there right close and the boat was launched there; there was a beach there and there was ice for quite a ways, so we took the boat on the ice for quite a ways, and I pulled the boat out and when we launched it, it went into the mud about that deep (indicating); it was slightly cold.

Mr. LILJEQVIST. The witness indicated up to his chest.

SPECIAL MASTER. Yes.

The WITNESS. I went right in. (R. 1916.)

Cross-examination:

I got into the boat, and shoved it out, and broke through the ice when we launched it. That was in the early spring; it must have been as early as March, the early spring freshets were coming in; they must have been, but I don't know. (R. 1921.)

We went on a cruise, all over the (Malheur) lake in the boat.

Mr. LILJEQVIST. Q. Did you go out in this western part of the lake?

A. Yes, we cruised around on that side.

We cruised around on the north side, you might say.

Mr. LILJEQVIST. Q. Did you go down toward the Narrows?

A. Yes, we went as far as we could. We tried to find the channel. There was a channel from Malheur Lake up to the Narrows. (R. 1922.)

We looked for the channel; we had heard that people had got through there, but we did not find it. I do not remember about how many channels we found; it seems to me we found a great many.

Mr. LILJEQVIST. Q. Wasn't it a labyrinth of channels in there?

A. Yes. You see, there was a lot of tules; when you go up in there there was tules all over.

When we got into those channels, we could not see over those tules.

Mr. LILJEQVIST. Q. Did you see thousands of places that looked just like every other place?

A. Yes, sir, plenty of them. (R. 1923.)

I could not say how far we got down into the heavy tules. We must have been right close to the mouth of the (Blitzen) river. We passed right by the mouth of the Silvies (river). (R. 1924.)

We left on that trip I think along toward the last of April, or somewhere along there.

I did not go down in there in May, June, or July that year (1888). I had business away from here and all that summer I was away. (R. 1925.)

Mr. ARMSTEAD E. BROWN, called as a witness for the plaintiff, testified in substance as follow:

In September or October of 1885 I went in a boat from close to the Stauffer corral (near Windy Point) to the (Pelican) Island, but we did not land; we just went close by there. To land we would have had to get out into the mud, but we did not land, and we returned. (R. 2178.)

Mr. RUBIN T. HUGHET, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never went duck hunting in a boat in the early days. (R. 2194.)

d. 1890–1900

Mrs. EFFIE L. DUNN, called as a witness for the plaintiff, testified in substance as follows:

During one winter that I was going to school, I experimented a little with a boat. I was going to school at that time and I stayed with Mrs. Wilson, that was right close to the Jason Bennett property (R. 850), just a couple of hundred yards maybe north of it. We used to go to school in the Simon Lewis schoolhouse although at that time it was not located just where it was when I taught there; it set farther out in the (Malheur) lake. There were just two children that went to school there, Frank and Mattie Bennett. Frank was 16 or 17 years old and I was 16. Frank Bennett and I were the boatmen; I knew more about boats than he did. We used that boat every day for about a month, I guess that was in 1894, in the extremely high-water (year), and it was in the high-water season, 1894 was the highest-water year I knew in Harney County.

In order to get to the schoolhouse, we followed the slough; I don't remember that we went right close to the schoolhouse; I think we had to (R. 851) walk a little ways, but we followed the slough

a ways until we got where we co ld walk. We used a homemade flat-bottom boat, and it didn't have any steel on it at all. (R. 852.)

Cross-examination:

I never went over the tops of the tules in a boat; it would have been too hard to row a boat across the tules. (R. 856.)

Mr. LILJEQVIST. Q. And then what you have been testifying to about how you rowed around there, and went around there, was in the fall and winter, when the water was at its lowest?

A. No. I told you that I was going to school, and I went to the Simon Lewis schoolhouse, but the place I went from was east of the Simon Lewis schoolhouse, and it might have been a little north. The country has changed a lot, and I haven't been over in that country for a long time, but I never did teach school and go in a boat in my life. I just went that term. It might have been a month I stayed with this woman while her husband was away. I didn't go to my father's property.

Q. And it was in that month of the fall that you have been testifying about?

A. No; it was in the spring. In the fall I taught in the Sodhouse District. (R. 863.)

Mr. JOSEPH WILLIAM CLARK, called as a witness for the plaintiff, testified in substance as follows:

At one time I went down to get in there (the old George Thompson place) and Mr. Ruh locked the gates, he wanted to take the place and he wanted the hay, so he locked his gates out on the north side of his place and would not allow me to get down through there to get to (R. 1031) my place; he also sent his hired man to jump the ranch. When he locked the gate, and told me that I couldn't get through, I went around back to Sam Graves' place and stayed all night; and the next morning I got Mr. Sam Graves to take us into the ranch in his little flat bottom boat. We could not go in a direct line from Mr. Graves' place over to our place, we had to get out into the water from his place south a ways, then we would have to turn north and south quite a little ways; we would have to dodge to get in between the patches of tules to get down south of my place, then we turned and rowed backwards through the open places in the tules until we got up close to our barn, and then we stopped there. Mr. Graves carried my wife and his sister to the shore, and I carried the two children. We waded through the mud and water. I never measured the depth of the water, but the water and mud struck us just above the knees and it was not very easy walking. (R. 1032.)

Cross-examination:

I used a boat there (at my place) one time I believe, and I went out a little ways with my brother and he shot some ducks. (R. 1040.)

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

The farthest I have been in a boat in the west end of Malheur Lake was up north of the Sodhouse (R. 1048); that was in high water.

Mr. BLACKMAR. Q. Tell me about the progress that you made up there through the channel, and through the tules.

A. Well, there were times when the water is high after you left this channel at the Narrows that you could row right along, and you have to pick your way through the tules. During the low-water time I have seen it in the spring when you have to push your boat with the oars to get through a few places, and when you get in there there is quite a lot of deep water and shallow water, and you have to pick your way around from one channel to another to get through.

Q. When you say open water, how big a place do you mean?

A. Well, there are different sized places. Some places will be what we term small lakes, and they would be probably two to three hundred yards across, and maybe half a mile long; and then there would be other places where the open water would be only probably five yards wide, and maybe a mile long; kind of a slough would run up there.

Q. And then these places were surrounded by tules, were they?

A. Yes, sir.

You have to pick your way to get through. There would be an open place to get through, and then there would be (R. 1049) places that you could not get through (R. 1050).

Cross-examination:

I went hunting up towards the sod house.

Mr. LILJEQVIST. Q. Did you hunt a lot?

A. I put in most of my time in running out on the lake.

Q. Now, just tell us where you went? Did you just go in a single channel up toward the Sodhouse?

A. I have been in a good many channels.

I went all through that westerly part of Malheur Lake in a boat. It stretched for quite a number of miles across there from the north to the south side, but there are ridges and then sloughs and then lakes all the way across. (R. 1059.) When I talk about sloughs I am referring to a low depression in the land that runs from a quarter of a mile to a mile up and down. There would be usually open water, and then a little salt grass along the ridges. In some places there would be tules, other places there would be none. I could not say how deep the depressions were. I have stuck my oar overboard to find out, and it was probably four or five feet.

Mr. LILJEQVIST. Q. Outside of once in a while when you would strike a little thicker patch of tules in these different parts of the lake, did you have any difficulty at all in going from the Narrows up to the Sodhouse.

A. No, sir, not at high-water time.

Q. And how long would that high-water time last; during what months normally?

A. The water usually came along in March or April, and started to recede about the first of July, I would say; I don't remember exactly. (R. 1060.)

Around August or November is what I call the low period. I could not say as to the difference between the high and low water on the lake itself; I never did measure it. (R. 1061.)

Mr. LeRoy Bunyard, called as a witness for the plaintiff, testified in substance as follows:

In 1893 was practically the first time I saw Malheur Lake. I went down there to hunt ducks and geese. We had a small homemade boat, about 16 or 18 feet long, that we used, and we also used oars. I think the boat was made down there by some one; I don't recollect. I think Mr. George Thompson got the boat from somebody; don't remember who it was now; at any rate, it was a homemade boat. The first time I saw it was down by Mr. George Thompson's house, near the lake. (R. 1147–1148.) He had a house down there on this ridge right close to the lake.

Mr. Blackmar. When and where did you go in this boat? By the way, did you have any trouble getting out to sea in the boat?

A. Well, there were some seasons we did, especially in the fall of the year, but usually in the spring in high water we didn't have very much trouble.

We had enough water to float it. I think it drew about four inches with one man in it, possibly more with two; I don't think it drew more than six or eight inches of water. We just used the boat to go hunting ducks.

There were times when we would bring the boat in, come right up pretty close to the house with the boat; and again in the fall of the year, we would have to leave it out a couple of hundred yards sometimes from the shore (R. 1148) and get on the tules and follow the tule lane around, and keep out of the mud and it would make it easier walking for us. (R. 1149.)

I found that Malheur Lake was deeper in some places than it was in others. I know there was one place we could row along for a ways pretty well, but when we came to this place, the water was not quite deep enough for us to use the oars, and we would take one of the oars and push the boat along at this place, probably a hundred yards. When we were in the boat, we were going in and out among the tules and the sloughs.

Mr. Blackmar. Q. That is, you were not going from Thompson's place say to the Sodhouse?

A. No; we hardly went any farther than the tule lane. That is, out toward the middle of the lake.

We would then shoot our ducks and geese and throw them in the boat, but during the spring and the high-water period, we did not have any trouble at this place usually where I have reference to pushing the boat; we usually would get over that. But in the fall,

we had to push the boat over that place for a ways. (R. 1149.) In those days we did not go hunting very often in the summertime; usually hunted in the spring and late fall. (R. 1150.)

Cross-examination:

I never did get in my boat and go down to the Narrows from the George Thompson place. (R. 1158.) We did our hunting right there where the Silvies River ran in up to south of Mr. John Gregory's place at the Sand Reef. (R. 1159.)

I hunted some with a fellow named George Hill down on Malheur Lake and we used a boat when we were out on the lake to hunt. (R. 1165.)

Mr. FRANK CATTERSON, called as a witness for the plaintiff, testified in substance as follows:

I used to get to Pelican Island in different ways. A brother of mine owns a ranch in the north end of that island and sometimes I have been across that channel in a boat and led the horses behind the boat. Usually we went across with horses. The boat we used was just a little home-made rowboat ten or twelve feet long drawing about five or six inches of water. I don't know whether that boat was kept on my brother's place. I think we used to bring it up to father's place and haul it back in a wagon down there when we wanted it. It might have been left there. The reason we hauled it in a wagon instead of putting it in the water near my father's and going across the water from there was because we wanted to get the stock out that year, and it took quite a while to get down there. (R. 1186.)

Cross-examination:

I never went in a boat much, and I did not go hunting. I was in a boat one time with George Sebring down to his place; that is known as the Spurlock place now, the lower end of the Spurlock place.

(NOTE.—The A. and C. Spurlock house, as it is now sitting, is in the southern portion of Lot 5, Section 19, T. 25 S., R 32½ E.—Pecore.) (R. 1193.)

I went, I should judge, about three-quarters of a mile south from where the house is now located. (R. 1193.)

Mr. LILJEQVIST. Q. What is the fact in those early days, if you had been familiar with it, whether you could get in a boat at the Narrows and go up in the open waters of the lake?

A. I think you could. (R. 1193.)

Mr. CHARLES SUMNER JOHNSON, called as a witness for the plaintiff, testified in substance as follows:

In 1892 and the following year, we used a boat around there that belonged to Simon Lewis, I think. (R. 1252.) It was just a rowboat which we used around that (Malheur) lake gathering up some duck eggs and the like, on those little hills, and we cut some hay out there, and hauled some hay over one year on a boat. (R. 1253.)

Mr. JESSE O. ALDERSON, called as a witness for the plaintiff, testified in substance as follows:

While I was in there at the George Thompson place, around 1898 and 1899 (R. 1271), I used a little homemade rowboat (R. 1273) for hunting on the (Malheur) lake. I had no difficulty in getting around in the boat except that I had to go around between tule patches; that is about all. I could get just about up to the Thompson place in it. There a pretty high bank there; it slopes off pretty steep right there at the south end of the Thompson place, and you can come pretty close, but not right up to the bank.

Mr. BLACKMAR. Q. Some other places where you have been with that boat, did you have to drag that boat?

A. Yes.

Q. Get out in the water and drag it?

A. Yes.

I have dragged it pretty nearly all distances from a quarter of a mile down to 30 or 40 feet. I believe those two years, 1898 and 1899, were pretty good water years. (R. 1274.)

Cross-examination:

During the time that I was in there hunting, I went round various places on the west side (of Malheur Lake) (R. 1277), and off towards the Narrows, in a southwesterly direction from where we were haying. We went in a boat all through there hunting ducks. We did not go clear out into the open water. There were channels out through the tules. I never knew the depth of the water in the channels; I put my oar overboard, as I was curious, and there were places I never touched bottom with a six-foot oar. That was probably in the middle of August. (R. 1278.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

One time I went on a muskrat and mink hunt into the western end of Malheur Lake. (R. 1321.)

Cross-examination:

I have been hunting up in Malheur Lake. I have rowed up there to the Narrows. I did that just one spring. That one spring they had high water, and we rowed up there toward Scott Haley's place. I think we camped on a little ridge that time, which was termed as an island, and a fellow lived there whom we called Pinto Tom, and we camped there two weeks. I can not tell you the exact date, or what year it was, but it was along about 1899 and 1900 I would term it. (R. 1330–1331.)

When I went on that trip I hunted ducks only a short distance east of the Narrows. I was hunting muskrats at that time. It was in the spring, along about March, or something like that. I could use a boat at that time.

Mr. LILJEQVIST. Q. How far east of the Narrows did you go in a boat when you were hunting muskrats?

A. We used to go up to that place that we called Pinto Tom's cabin.

We rowed up there through the channels there, and by going backwards and forwards you could work your way through, and row your (R. 1331) boat. (R. 1332.)

Mr. GUY L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

I do not think I was up in the west end of Malheur Lake in a boat. I was not (R. 1345) more than a mile above the Narrows in one. (R. 1340–1341.)

Cross-examination:

At the time I went in a boat about a mile up toward Malheur Lake, I struck the tule barrier about a quarter of a mile above the bridge, at the Narrows. There was a kind of a channel through it that I went up. I was hunting at that time. There were practically all tules there; I know we got in some going through. About a mile is as far as we went up there, and I do not know what the condition was above that point. (R. 1345.)

Mrs. FAY COMEGYS, called as a witness for the plaintiff, testified in substance as follows:

When I was a comparatively young girl, we had occasion to visit all the neighbors that lived east of us, when we lived at the Narrows.

Mr. BLACKMAR. Q. Jason Bennett and Griffin and Mrs. Griffin, and those people up there?

A. Yes, sir. We have ridden to their houses in a boat when the water was real high. (R. 1413.)

Cross-examination:

I went to the Bennett place in a boat (R. 1415); there were several neighbors around, and we would row around when the water was high. We could get to some of them in a row boat, and we could not get to some of the other places in one. The water was not deep enough.

Mr. LILJEQVIST. Q. You mean when it got next to the little rise where their house was on, you could not get quite close enough to their house, is that what you mean?

A. It is according to where the place is. Where Scott Haley is now you could never get there with a row boat, and when he lived out in the (Malheur) lake there was too much tules to go in a row boat.

The thing that prevented us from going there in a row boat was the large tules; you could not get through the tules; they were too heavy.

There were not very many channels in there. In some places there were. I would not say how deep the water would be in those channels; not very deep. (R. 1416.)

Mr. LILJEQVIST. Q. What year was it you went in there, as you have been testifying about?

A. I could not tell you the exact year. It was when they had high waters there on the lake.

It was several years after 1889.

Mr. LILJEQVIST. Q. How long after, do you know?

A. Well, it was several years after when we went in '89, and there wasn't high water.

It was before 1898 when we had the high water, or along about then; we had high water for several years, but I could not say what years. (R. 1417–1418.)

Mr. SIDNEY COMEGYS, called as a witness for the plaintiff, testified in substance as follows:

I have been out on Malheur Lake in a homemade boat; I did not make it myself. I have a relative by the name of Harvey Reinhart who lived right near the Blitzen River where it emptied into Malheur Lake, and I stayed there most of the winter with him. That was in the winter of 1894, and 1895, and I used to go out with him; he used to trap around on the lake, and my recollection is that we never did get very far out in that open water. He (Reinhart) trapped around the edges (R. 1450); around the tules. I went out with him backwards and forwards.

He trapped principally muskrat and mink; do not remember whether he got any otter or not in there.

He (Reinhart) operated this boat with a pair of oars. He wore big high gum boots, and he had to get out—some places he could land good, and some places he could not. He used the boots to shove the boat to edges and places where he could not get his traps. I did not do much of the pushing, but I used to go out with him.

Mr. BLACKMAR. Q. Is that the sum of your experience in navigation?

A. Yes, sir; my experience on Malheur Lake. I have not been on the open water since, except on parts of it when it froze up. (R. 1451.)

Mr. A. A. REINEMANN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Did you ever go out boat hunting in front of that meander line?

A. No.

I never did very much hunting of ducks in boats; it is hard to get through the tules.

I was about eight years old when I began to hunt.

I was about five years old when I went in there, and I was just about eight years old when I went hunting.

I never went out very far in a boat; I could not push it through the tules; in the open water I could get out. (R. 1677.)

Mr. JOHN J. HEINZ, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I never had time to hunt, and I did not have a boat myself. (R. 1685.)

Mr. THOMAS T. DUNN, called as a witness for the plaintiff, testified in substance as follows:

I have used a boat down there (in Malheur Lake); it was a square bottom boat; we used to hunt duck eggs sometimes in it. (R. 1827.) The way we got around in the open water, we had oars and we pushed it along, or rowed it along, and we had a pole and pushed it through the tules, generally. (R. 1828.)

Mr. LLOYD B. CULP, called as a witness for the plaintiff, testified in substance as follows:

I have hunted around in Malheur Lake in a boat. We camped, I think on Cane Island, or Cole Island, I don't know which, and at that time we had (R. 1851) a homemade flat bottom boat, about three feet wide. I think that was in the nineties, between 1890 and 1900, I can not give you the exact date. I am sure it was in the nineties.

We used two oars and a pole; we had to have a pole; if we didn't, we could not go much distance, because we would hang up on mud and tules. We had to push the pole down in the mud to get solid ground, and push out.

I remember on another occasion I went down there (Malheur Lake) in a canvas boat. That time we hunted this way farther, I believe it was in about Joe Hill's place. I do not know any of those places, but I have heard since, and I believe we were right about the Joe (R. 1852) Hill place.

One man would go out in a canvas boat and hunt. It didn't take much water to run the boat; it would float on top, and we would push it through the tules, and where there were cattle trails, it would separate the tules, and we would go through with the boat. As I say, we would go out with this boat and find an open place in the water and a big batch of tules, and then another batch of tules and open water, and all the way through it was like that.

We did not use markers on the tules to find our way back; we were out one night, and we would have been out all night except for a lantern which was hung up on a tule which showed us our way back.

We probably could have seen Saddle Butte or Wright's Point in the daytime, but not at night. I never noticed.

I do not remember whether it was in the fall or the spring when I was down there in the canvas boat, but I believe in the spring of the year. I think it must have been along in April. I will say it was in April. (R. 1853.)

Cross-examination:

If you were right up against the tules, you could not see any mountains around the edge whatever in the daytime, but if you were in the open water, you could see over the tules. I don't know how high the tules grew, but it was over my head. Standing up in a boat they would be as high my head, and in some places, awfully thick. (R. 1854.)

Mr. W. A. CAMPBELL, called as a witness for the plaintiff, testified in substance as follows:

I only had a boat for a few years. It was about six or seven feet long, and four or five feet wide.

I used that boat when I wanted to move in. I had some sloughs to cross, and sometimes they would be a little soft; I put my stuff on this boat and put (hitched) from two to four horses on it, and I would go in with that.

I did not use oars on that boat; nor did I use any motor on it, if you mean an engine; I just had the horses which I hitched to it (the boat), in order to pull it. (R. 1978.) In pulling the boat down, part of the time I would be in the water, and part of the time on land, and when the boat was on the water, it run easy, and when it was on those ridges, it run hard.

Mr. BLACKMAR. Q. And when you went down to Charlie Haines' place to get your grub, or to buy something down there, why, you would just go right on down through the (Malheur) lake?

A. I would go out the road, and go on down; and when I came back, I came back the way I went out. (R. 1979.)

c. 1900–1910

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

In about 1901, I went up through the Narrows into the west end of Malheur Lake in a row boat. (R. 629–630.)

There were lots of tules up there, and some islands. There were channels all the way through there, and only occasionally did we have to put the boat through the channels. The tules came in; they were pretty close, and in some cases we had to push the boat through those tules.

Those are the only occasions that I have had to use a boat down there. (R. 630.)

That part of Malheur Lake that I was on in a boat was all shallow water, except in the channels, and they were not very deep. We had a pretty hard time finding our way back in those channels and tules; they all looked about the same. (R. 632.)

Mrs. OLLIE DARSEY, called as a witness for the plaintiff, testified in substance as follows:

After I was married, we moved to the town of Drewsey; my husband was a great hunter. He had a couple of boats and he always

used to come to Malheur Lake about twice a year hunting. I accompanied him on those trips three times; the first in the spring of 1907.

Both of the boats he used were flat-bottom homemade rowboats. We used oars. (R. 648.)

We put the boat in Malheur Lake at Clarence Carey's place, which is south of Lawen, and about a mile and a half from Saddle Butte. (R. 649.)

(NOTE.—Clarence Carey's place is the fractional south half of the southeast quarter; and the southeast quarter of the northeast quarter of Section 24, T. 25 S., R. 32½ E.; and the fractional northwest quarter of the northwest quarter of Section 19, T. 25 S., R. 33 E.—Pecore.) (R. 649.)

There was no bank up there at Clarence Carey's place, it was mostly a gradual slope; might have been a bank perhaps three to six inches high, but that was half a mile from the house.

We brought our boat there in a wagon; then we took a horse and hitched it on to it and dragged it out to the water; then I got in it, and my husband shoved it out into the water until we could get to where we could float the boat; that would be perhaps a hundred yards or more, I could not say exactly. I am a poor judge of distance on water; from that point we went hunting around the tules on the lake, sometimes we would go east, sometimes west; sometimes we would go quite a long ways; sometimes went as far as Pelican Island, which was always out of the water, and I have not seen it covered up; in the operation of the boat, sometimes we got groundings, sometimes we would get stuck (R. 650); sometimes we would get out to get the boat floating again; sometimes my husband could take an oar and shove it loose; but the most of the time he wore gum hip boots and he would step out and shove the boat loose; he did not have to drag it as a rule, because we took the course where the deepest channels were and he would follow those; lots of times he would step out on a tule patch and drag the boat up, but that was all; when we came back, we always hunted at about the same place, Carey's place; then my husband would pull the boat until I could get out, then we would walk to the cabin. I think it was about half a mile or farther to the cabin, but I do not know exactly the distance.

We stayed there at the cabin about two weeks in that spring (of 1907); then that fall we went back again and stayed a week that time; then the next spring (of 1908) we were there a short time, I am not positive whether it was the next spring or the one after that. (R. 651.) On all of those occasions we launched our boat near Carey's place when I was with my husband and the progress of the boat around there among the tules on these other occasions was as I have already described it on the first trip. (R. 652.).

Cross-examination:

I went on a road along the entire length of Pelican Island; on the occasion when I went hunting with my husband in the spring of

1907 (R. 648) we went on to and along the entire length of Pelican Island.

Mr. LILJEQVIST. Q. And then did you cross the lake to the south in your boat?

A. Yes, sir, we crossed the lake back to where we were camping.

Q. No, I mean to the south side of the lake?

A. Yes, sir, we crossed at the south side of the lake. (R. 659.)

We rode all around Malheur Lake. I never did see anyone else in a boat in Malheur Lake while we were there (in 1907–1909). (R. 663.)

Mr. JOHN L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

On different occasions I have used a boat for hunting; principally sports. The farthest east I have been in a boat from our homestead (at the Narrows) is about 8 or 10 miles (east)—whatever distance it is—to the Sodhouse, or Alva Springer's Spring; I have been out about even with that on the north line (R. 894); we had plenty of open water for nice rowing after we had reached a mile from the channel; we left what you might term the channel, as she breaks in and forms a channel, and then we had more open water—four or five miles of open water; that is what we termed it then; we never studied the matter thoroughly, but there was plenty of open water then up there. Within a radius of a mile or two we had to pick our way around tules to find the open channels; there were tules practically all through. Just looking off into the surrou ding territory, you might think it was solid with tules from the Narrows up two or three miles, and that there was no open water, but as you rowed along, you would find plenty of open water to go through in a boat. (R. 895.)

We hunted practically all the year until it was frozen, and all the summer—I will say the spring. During the summer and fall we went in a boat most any time until November or December, and January and February the water was frozen over.

December, January, and February were the frozen months, and we did not go in a boat at that time. We could go in a boat practically at any time of the year that I know of. I will say that during those ten years that I was there, from 1901, and there have been times since that that I can not recall, but I have rowed since that in the water. (R. 896.) I had no trouble getting a boat into the water. Right at the Narrows channel it would slope more or less, and in landing we would run the front end of the boat onto the land and tie up; going out we would push the boat off—raise one end push it into the water, and turn our boat around sideways, and we had no trouble. (R. 897.)

Cross-examination:

When I got from a point about a mile east of the channel there was more open water. The channel I am referring to is the one

that is down west of the house where I lived (at the Narrows). (R. 897.)

Mr. LILJEQVIST. Q. In other words, you traveled how far from your house, situated on the lands that you have described, to where you began to get the open water?

A. I termed it around a mile after we got out of the channel. I will have to tell you that. It was only a few hundred yards, and then we zigzagged the channel in the tules.

Q. And you traveled that way for about a mile?

A. Yes, in the neighborhood of a mile.

Q. Then what did you find?

A. As we went east we found more open water—that is, pulling out into the body of the lake where we went.

Q. And it was that way all the way up to the Springer's Spring, the Sodhouse?

A. Yes. (R. 898.)

Q. Now, as I understand your testimony, except during December, January, and February, in those 10 years that you were there you hunted the entire year?

A. Oh, no.

Q. You went up in a boat?

A. At various times. That was our amusement, you might say. We had other duties to do. (R. 906.)

Mr. LILJEQVIST. Pardon me. I didn't mean to say it that way, that you were not doing anything but hunting.

Q. I mean during that period, excepting during December (R. 906), January, and February, did I understand you to say that you could go in a boat up to this place you described at Springer's?

A. Yes, I will say so. (R. 907.)

I remember the year 1889. I did not go hunting that year from our homestead at the Narrows towards the Springer country. I did not hunt at all that year.

Mr. LILJEQVIST. Q. Did you go out in the boat that year at all?

A. Merely crossing——. No; we had no boat. I will change that answer to "No." (R. 911.)

Redirect examination:

There was a little channel or slough right near our house at the Narrows; it was not of very great depth; it would (R. 916) only fill as the water got higher in the main channel. That is not the same channel that runs under the bridge.

Mr. BLACKMAR. Q. What was it, kind of a little slough that ran off the main channel?

A. You might term it a slough.

It (the slough) would enter into the territory south of what we would term the Narrows; the slough ran clear through our patented lands, and entered the lower country from that place.

Mr. BLACKMAR. Q. And then you got into this little channel down there?

A. What little channel? (R. 917.)

Q. Well, I assume now you are going up through the eastern part of the (Malheur) lake. Did this slough run into a channel down there?

A. Yes. We are going up what we call the lake in a northeasterly direction, and it would enter this main channel, which is bridged. That is what we called the Narrows Bridge, it is over this channel. That channel from the bridge is a few hundred yards (R. 917)—about three or four hundred yards, before you enter into what we call the body of tules. It is that much open channel, you see. Then we went through the main body of tules, and kind of picked our way from one little open space to another, eventually working around to where we came to some open water. (R. 918.)

Recross examination:

After leaving the Narrows Bridge for a few hundred yards, there is an open channel; then you come to some tules, and we wended our way through those tules (R. 918), and after wending our way through that batch of tules, we got to some open water. It would be about a mile or so before we got to open water. (R. 919.)

Mr. D. H. SMYTH, Junior, called as a witness for the plaintiff, testified in substance as follows:

I have never operated a boat on Malheur Lake. (R. 1467.)

Mr. ARCHIE MCGOWAN, called as a witness for the plaintiff, testified in substance as follows:

I have been in there (Malheur Lake) several times in a boat, a light skiff, a home-made boat, drawing a few inches of water, which we operated with a pole and a paddle. Quite often I got into the water myself.

Mr. BLACKMAR. Q. Supposing you give me what happened on some trip when you were in there in a boat which would be typical of your (R. 1553) experiences there over a period of years in a boat?

A. A boat tipping over, do you mean?

Q. No; just going in and going out, and how you went, and how you propelled the boat, and whether or not you got in the boat, and so forth?

A. Well, I have made numerous expeditions of that kind really. Several of them on the north side, and a few on the south side.

Q. Well, usually where did you put your boat in the water? Where did you start from?

A. Well, just really wherever we came to the lake, as far as that is concerned; wherever we got to the shore line, wherever it might happen to go.

I took the boat down from a friend of mine who lived south of Burns. We took a boat one spring into the south side of the lake. At that time it was very early, in the month of February, and we were east of Cole Island. The water was very shallow where we put the boat in. (R. 1554.)

We would generally drag it (the boat) with our (gum) boots on until the boat would float, and then we would get into it. On that particular occasion we had to drag it probably several hundred yards before we could float it. At that time, in February, we started with it right in the vicinity of where the Haines pump is located.

(NOTE.—The Haines pump is in Lot 9, Section 13, T. 26 S., R. 32 E., south of the lake.—Pecore.) (R. 1555.)

We did not go very far out into the (Malheur) lake from that point (the Haines pump). There was no occasion to go out. It was early in the spring, and just that side of the lake was what we called open water; and we floated around there a couple of nights and shot some birds. The weather was fine, and we had some experiences of getting wet. (R. 1555.) We were really out just for a good time.

I do not think we went over to Cole Island at all on that trip. I would say we were probably never more than three-quarters of a mile from where we camped there near the water line. We camped just on the edge of the salt grass and sagebrush; you might say where the salt grass met the sage rush; we made a little camp there and we stayed there a couple of nights.

It was difficult to operate the boat there on account of the tules.

In fact, I have had some peculiar experiences out there in boats, and I learned you had to be pretty careful about getting out, and as to whether you were going to get back or not. You would go out to a little open water, and the first thing you knew, you would not know where you were. If it happened to be a cloudy day you would lose your directions and you (R. 1556) would not know how to get back. I have really been lost out there for a while.

I adopted a method to help to get out and back again. I observed where other people had been going out and flagging their way out, so that I learned to flag my way out in order that I could get back safely.

When I was in there (the west half of Malheur Lake) in a boat it was absolutely impossible while among the tules to see any of the well known landmarks, like Saddle Butte, or Wright's Point, because the tules were so high in there it bothered you; you could not see anything.

In these tules were what we called channels of water that looked like they would lead you some place, and you would think that you were going out into big bodies of open water, but quite often you would not get anywhere. Often you would find little islands of salt grass and ridges where you could land a boat and get out. (R. 1557.)

Cross-examination:

You might have a little trouble going through the tules in the high water, spring of 1891, unless you knew the country. The tules were interspersed with channels all through them. (R. 1566.)

The hunters down there would put a piece of white paper, or a piece of cloth up on the higher tules in order to find their way out. That is what they call "flagging."

Mr. LILJEQVIST. Q. And you would go down there, and you would find dozens of channels leading in every direction, and they all looked alike?

A. That was the condition down there.

Q. And you might go out a mile or two, and it would be exactly like that all the way?

A. Yes.

Q. There would be a little tule patch surrounded by water, and channels leading off here and there and everywhere, and you (R. 1566) would go into this channel, and you would wander around, and you would still see more tules and channels, and before you got through you had no idea of how you got in there, is that correct?

A. That is true. (R. 1567.)

Mr. WILLIAM DAVID HUFFMAN, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never done any hunting on Malheur Lake in a boat. I do not know that I have ever seen anyone hunt in a boat, but they probably have, but they never hauled much lumber across in boats.

I do not recall seeing any boats in that west area of Malheur Lake at all. The only boat that I remember is a boat on the Springer ranch when I first went there belonging to old man Springer; we called him Judy, and he went out and gigged fish, probably two feet long, in the lake. (R. 1586.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

I have been on practically every part of Malheur Lake.

I have been on it in a boat. When I came to this country I brought with me a little folding canvas boat that I could carry. When it was opened up it was about nine feet long and would carry two very nicely, with a little camping outfit in it. I used that for a period, I would say of fifteen years; it was supplemented by a boat that the county had built here in one of the high-water seasons to get the mail in and out of this town (Burns, Oregon). I got hold of that boat, which was a wooden boat and built here, but it was a little heavy; and I had those two boats, and those two boats were practically all I ever used, excepting the Government boat that was kept there after it (Malheur Lake) was a Bird Reserve; and I was a good deal in those boats. (R. 1601.)

I was a little familiar with that part of the (west half of Malheur) lake (the Red Campbell and the Vickers places), because of the fact that most of the time I spent there was in a boat, and it was not good boating down in that part of the lake. (R. 1610.)

I have traversed that open water west of Cole Island in a boat. At certain seasons of the year a kind of a plant grows in the water there that is particularly noticeable by anyone who tries to traverse that part of Malheur Lake in a boat. It is a little weed of a plant that comes to the surface of the water, then runs like a vine on the

surface of the water, and the leaves lie on the (R. 1611) surface of it; it comes up in the summer and it grows so much that you have great difficulty with boats, especially if you are using a little outboard motor, it tangles with the motor, and gives a good deal of trouble.

It seems to be as good as wheat for the ducks; that plant comes all over the water and that isn't over three feet deep, and that weed is in the largest body of open water lying west of Cole Island that there is in the (Malheur) lake; that body of water I have been on a great deal, both in my own boat and in the boat or boats that belonged to the Government there; and late in the fall, or late in the summer we had a great deal of trouble with that particular weed. Practically all of that open water was covered with this weed at certain seasons of the year. (R. 1612.)

Mr. JOHN G. DARSEY, called as a witness for the plaintiff, testified in substance as follows:

I have been down to the (Malheur) lake from time to time hunting, mostly. (R. 1957.) I was in there from 1902 to 1908. I think every spring and fall I hunted on the lake.

In connection with my hunting down there, I used a boat. We did our hunting generally in the lower part of the (Malheur) lake; really on the north shores, and clear out across as far as that is concerned. I was up as high as Silvies River and I crossed the mouth of the slough, what we call the Springer Ranch. We hunted in the eastern part of the (Malheur) lake. I do not know the upper part (the west part) of the (Malheur) lake. I never was in the western part of the lake, except I might have been a little farther (west) than the Silvies River, about around the edge of the tules, and I went there to the Springer place. (R. 1958.)

I have been around Cole Island, but I did not know it by that name. There is hardly an island in there that I haven't been on, but I did not know it by that name at the time. (R. 1958.)

I know Pelican Island; we used to camp frequently on the point of Pelican Island. (R. 1958.) There was very little vegetation on Pelican Island, when I was on it. Mostly greasewood and kind of a Sand Reef; there was also a kind of a little salt grass that grew around the edges of it, but not a great deal of that; some years more than others.

Pelican Island and Cane Island were about the only islands I knew by name. Cane Island is west of Pelican Island. It would be kind of hard now for me to give you the distance Cane Island is west of Pelican Island; it has been a long time since I was there, and I would hate to make a mistake. We used to run across there in a boat and it used to make a day's hunt; we could go out from Nine Mile Slough and across there and hunt. One night we had bad luck and got in late; we got lost out there and we had trouble finding the Island. (R. 1959.)

I do not think there was any greasewood scarcely on Cane Island; there was this cane, and that was how it got its name, I suppose.

I do not think that I have seen other islands in that part of the lake other than Pelican Island that had greasewood on them. (R. 1960.)

Mr. BLACKMAR. Q. How did you and your associates get along in the operation of this boat?

A. Well, I don't know hardly what you mean by that question.

Q. Well, did you find at all times enough water to float your boat?

A. Oh, no; no, sir. Lots of times, and very frequently, we would run onto a muddy place, and have to take a pole to push the boat out. Sometimes the water wouldn't be very deep, but the mud would be deep enough to get over with gum boots; and we usually carried a pole in the boat to push it off these places when we got in the mud. I and my associate usually wore long hip boots.

There was quite a space of open water in there out from the end of Pelican Island, and all around the south side of the (Malheur) lake. There was very little tule of any kind. It was almost all open water, and very shallow. (R. 1960.)

The best duck hunting we found was up around the tules; that is about the only place where you would find them. When they would fly out, you could get them.

Mr. BLACKMAR. Q. How did you get along with the boat in the tules?

A. To commence with we had bad luck. I had two boats; I had a narrow one, and a small boat to hunt with, so that we could go through cow trails; in going through these tules we would go from one little pond to another, and go through these cow trails where they mashed the tules down; but you couldn't go through with a big boat, as you could only get through there by shoving and pushing the boat, and get from one pond to another.

Q. In going from one pond to another, did you use your poles?

A. Yes; and sometimes we would have to get behind the boat and push it through, and if it was a little deeper it would be easier to push it through with a pole rather than to get out and shove it along.

In those days, we hunted usually both in the spring and fall. The spring months that we would hunt in would vary. (R. 1961.) I had a cousin who lived down (R. 1961) on the (Malheur) lake and as a rule, he would write me a letter when the birds would come and it usually was in March, and it would be clear on to the 10th or 15th of April, but you could not name any certain time when the birds would come in; there was no normal times when they came in; when the break-up came the birds came.

Cross-examination:

That was not early before the spring freshet came; generally, there would be a few birds that would come before the spring freshets came; but it was usually when the spring freshets came that

the birds came. Generally, the spring freshet would go on during April, May, and June. One year there was quite a break-up in February. Ordinarily the spring freshets came along in March and until April; that is when the spring water would come down. (R. 1962.)

In high water there were places that you could get through there (Malheur Lake). (R. 1966.)

Recross-examination:

The boat I had was 14 feet long and about 4 feet wide. The draft of it depended a good deal on the load that was in it. Two men could get into it, and perhaps it would draw three or four inches of water.

Mr. LILJEQVIST. Q. About the only place you couldn't use that was through these narrow places through the tules?

A. That is the only place we didn't try to use it, you know. We used the little boat to sneak through the channels. (R. 1969.)

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

As a boy down there (near the Narrows) I experimented some with boats. I have been up the slough there toward Malheur Lake a ways, but I was at Mud Lake mostly. (R. 2220.)

Cross-examination:

Mr. LILJEQVIST. Q. What did you do with reference to hunting out through the western part of the lake?

A. The western part of Mud Lake?

Q. No; Malheur Lake.

A. Oh, I just rowed a boat through there, that is about all.

I found difficulty in getting around through there in different places, but there were channels and deep water you could go through. You could go in some of the places on the meadow (western part of Malheur Lake), but some places you would have trouble. (R. 2223.)

I know Scott Haley, but I never was there in a boat.

I have been up to some of those cabins, but I do not know whose they were.

Mr. LILJEQVIST. Q. Now, just describe generally the way that western part of the (Malheur) lake was as you saw it in the early days.

A. It was just a body of water, that is about all I could tell you.

Q. And growing in the water was what?

A. Tules.

I generally had some kids with me.

I do not think I was ever in Malheur Lake in a boat after about 1905 and 1906; I don't know; I never had the opportunity to go. (R. 2224.)

Recross-examination:

I have been to Creason's in a boat. I guess they lived about three and a half miles east and north of us; of where we (R. 2230) lived

at the Narrows. They were on the border of the (Malheur) lake. They lived right south, I believe, of the Griffin place. I do not know who owns that place now. It is south of the Griffin place and west of Scott Haley's. (R. 2231.)

Mr. WILLIAM L. FINLEY, called as a witness for the plaintiff, testified in substance as follows:

In 1908, when I went with Mr. Herman T. Bohlman to make a survey of the Lake Malheur Bird Reservation (R. 2298), we had just a small flat bottom row boat that we got from a fellow named Bill Marshall; he lived at the mouth of the Blitzen River; that is down near the edge of the (Malheur) lake. (R. 2299.)

There were no other boats in there at the time that we were there; we had great difficulty; we hunted for over a week to find a boat. The first boat we had was a little (R. 2302) collapsible canvas boat belonging to Dr. L. E. Hibbard of Burns, Oregon. We took this down the first trip and explored down Blitzen River out to the edge of the (Malheur) lake, but we could not carry provisions to stay out on the lake, on these islands, for more than a day, so we hunted to find this boat, and naturally Bill Marshall had a boat. The boat had not been used; the seams were all open; we patched it up, a day's work was put on it, got it so the seams were all right so we could go out in it. He (Bill Marshall) had used it to hunt ducks occasionally.

There were no boats we could find anywhere on the (Malheur) lake except this one; we hunted (for a boat); there were two down at a place called Husers, east of Springer's place, but they were just little things that could not carry anything in, and they were completely broken so they could not be used, but there were no other boats, and we cruised all around over the swamp area; we found no other boats. (R. 2303.)

Mr. BLACKMAR. Q. Are there any fixed points down there that you now recall, which you could refer to, and give us some idea of the stage of the water while you were in there?

A. Well, Bill Marshall's old cabin was at the—was down towards the mouth of what is called the mouth of Blitzen River, below Springer's place, of course, and from there on the water merely spread out into a wide tule marsh. It is (was) shallow after we pass (passed) down into these tules; tules growing six, (R. 2299) eight, or ten feet high. We had a good deal of difficulty in finding our way through the marsh, to the body of the lake. We had to—we got lost once or twice; we finally found our way through the tules by tying little white rags to see to meander by out there. And there are these floating tule islands, we call them floating tule islands, tule growth; the roots form a sort of surface and they grow up and down each season, and that forms a sort of mat surface on these tule islands, where the birds nest in great numbers. Now from there the other only location, several miles as I remember we had no way of getting the exact distance over to the east end of the lake; now there was Pelican Island between there and the east end, and then straight

north; we were over and spent one week getting through the tules on that end, and camped in an old deserted cabin over at the north side.

Q. Was that cabin on the mainland, or was it on an island?

A. That was on the mainland; but after getting through this went on to tule. It was mainland. Was a big high haystack there, they had cut the hay. (R. 2300.)

(No cross-examination.)

Mr. THOMAS L. VICKERS, called as a witness for the plaintiff, testified in substance as follows:

During the time that I lived in there (on the Thomas L. Vickers and Brother place), we never had occasion to use a boat. (R. 2312.)

Mr. GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

The type of boat I used in trapping (since the fall of 1909) (R. 2499) was a rowboat—what they call a duck boat. We did not go into the western part of the (Malheur) lake past the Doc. Graves ridge. Never tried to do it. Never went in that area west of Doc. Graves' ridge any time with a boat.

The time I have been in the country I never went by water from the eastern part of the (Malheur) lake down towards the Narrows in a boat; I never tried that.

I never traversed any portion of the west part of the (Malheur) lake, the tule area, in a boat at all. I never used a boat in there at any time.

The Graves ridge referred to is in the area that runs from the water gage shown at the corner of Lots 5 and 6, Section 2, T. 25 S., R. 32 E., north of the lake; then southerly about six inches; thence southeasterly another six inches, on Plaintiff's Exhibit 3, and runs in a general northwesterly and southeasterly direction.

At the south end of that ridge it is just a big, flat country through there. Flat tule area. (R. 2509.)

All the other trappers used boats; they were homemade boats drawing three or four to six inches. (R. 2535.)

Redirect examination:

The tule roots I have referred to were bodies of dead masses of tule roots I found in different places in the (Malheur) lake; masses of tule roots—vegetation roots—they looked like tules; they had not grown any green stuff for years.

Mr. LILJEQVIST. Q. They were by themselves; nothing similar immediately around?

A. No.

Q. Those are the things you have noticed in the bed of the lake this year when the water went dry?

A. Yes. When the water was high, I would run out into something in the lake; I would get stuck, and it would be turf, and it would hold you up; and when you got off from there, it would be

all right, I have run onto these many, many times, especially with a good load on. We might have run onto two or three. (R. 2542.)

f. 1910–1920

Dr. Llewellyn Eugene Hibbard, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I held an official position (with the Biological Survey in connection with the Lake Malheur Bird Reservation) commencing about 1918; it was just about the time the war commenced. From that time on I went out on Malheur Lake with a boat which had an outboard motor. I went near Springer's with it, and down to the Blitzen River on the lake.

Mr. Liljeqvist. Q. And what area did you patrol with that gasoline motor? (R. 1631.)

A. Whatever we could get over. Sometimes we were only able to get down just to the open water; and sometimes we were able to go to Cole Island. I have many, many times gone to Cole Island.

Q. Did you ever go to Pelican Island?

A. I never was able to take the boat to Pelican Island the years I was there.

That covered a period of about six years, from 1918 to about 1924 or 1925.

I was still connected with the Reserve in 1922 and 1923. Mr. Benson was Warden all this time (during the time the witness was connected with the Reserve).

There were various depths of water there. There always was a question during those years (1918 until about 1924 or 1925) whether we could visit the places we wanted to visit; and oftentimes we got marooned, and we took along in tow a little canoe, drawing but an inch of water, and then we would leave the boat and go on it (the canoe) when the water was receding. In the last six years perhaps the boat hasn't been used enough; we did not find enough (R. 1632) water to float it. On account of this shallowness of the water, the motorboat wasn't very useful in the years I had anything to do with it.

Mr. Liljeqvist. Q. In the year 1922 do you remember being out in the lake with a party?

A. Yes, sir.

Q. Do you remember how deep the water was at that time?

A. Just to your waist as I remember it.

Q. Let me ask if you haven't forgotten: Isn't it a fact that I stuck an oar overboard and measured it, and it came to my nose, and I called on you all to observe that fact?

A. Yes, sir; I think that is true.

Special Master. The question is where Mr. Liljeqvist's nose was.

A. It was pretty high, and always has been.

Mr. Liljeqvist. My nose is about as high as yours.

A. Yes, sir. (R. 1633.)

Mr. JOHN W. HEINZ, called as a witness for the plaintiff, testified in substance as follows:

I have experimented with boats some on Malheur Lake; with both a rowboat and a motor boat. The motor boat was the same kind of a boat as the rowboat. We took and put a motor in the rowboat. It was about a 14-foot boat with a square back. (R. 1938.)

I do not know how many inches of water they drew. It is according to how it is loaded, I suppose. If we were running trap strings, we would carry the traps in it, probably somewhere around 50 or 60 traps, or probably as many as 75 traps sometimes. It weighed according to the amount of load we had in it, and it would depend upon how much water we could draw. The boat was about two feet high.

Generally speaking, in the running of the traps, we did our work in the northern part of the (Malheur) lake. It would be a lot west of Pelican Island where we did our trapping. It was mostly west of the main channel of the Silvies River, what they call the big channel down there. From that point I do not hardly know just how far west we would go with our traps. We would go out or to the edge of the tules next to Doc. Graves' (place); I suppose that would be about the place. We would not trap south of there any; we would not get clear down to the lower part of his (R. 1939) place. We did not have very good luck in the operation of those rowboats. It was too far to travel and we could not get far with a rowboat, and we would have to put a motor in the boat. We were going out too far to row the boat.

Most of the places we could float along easy, but once in a while we would strike a shallow place; then we used to pole it (the boat) off; we carried a pole along with us.

We used a marine motor on the boat.

Mr. BLACKMAR. Q. A portable outboard motor?

A. Yes; I guess that is what you would call it. It was a horse or a horse and a half power—horsepower, I think it was.

SPECIAL MASTER. One horsepower?

A. I think so. (R. 1940.)

We did not have a hinge on the motor to lift it up, the motor was bolted down solid inside of the boat, about the middle of it.

SPECIAL MASTER, Is that called an outboard motor?

Mr. BLACKMAR. No; that is not an outboard motor.

Mr. LILJEQVIST. No.

The motor we used had a shaft that went back to the propeller; we did not have a hinge of any kind on the propeller.

Mr. BLACKMAR. Q. While you were operating that motor boat around there did your propeller ever strike the bottom?

A. Yes, sir.

Q. And did it give you any trouble on that account?

A. Well, not much. It was mostly mud, you know, and it wouldn't do any damage; although we would get stuck once in a while, and

then you would have to help by shoving it off the sand bar. The motor couldn't pull it off. There was sand or mud there, or whatever you call it.

Once in a while we would have some trouble with the propeller on account of it fouling with the tules or other (R. 1941) plants that grew in the water. It was a weedless propeller. It was about half round on the outside edge where it turned around, but it would foul up on the weeds; there were a lot of weeds in that (Malheur) lake, and lots of times of the year the weeds would be on top of the water; we would get tangled up in those weeds, and we would have to stop and clean the weeds off the propeller. We did most of our trapping in the fall, and that was the season of the year that we used this motor boat. We used the motor boat straight through from 1911 to 1918.

At the time that we were working with that motor boat there, there were other trappers also in there (R. 1942), but they did not use a motor boat. The Game Warden (Mr. Benson) had a motor boat though.

Mr. Benson and myself were the only ones who had motor boats in there. (R. 1943.)

That motor boat is all smashed up now; it did not sink in the lake; I had it taken to my slough on my place, and it dried out. It went to pieces and the motor I had in the house, and the house burned down and it burned up.

Cross-examination:

I did my trapping south and west of my father's place. We did all our trapping west of the west fork of the Silvies River. I do not remember how many miles we went west of the west fork of the Silvies River; when you were on the water (in a boat) you can not tell unless you know the land through there. We went down pretty near to Doc. Graves' or Sam Graves' place; that was as far as we could go on account of the tules. We trapped in there at the edge of the tules; that was where we did our trapping. There are quite a few channels out there (west of the west fork of the Silvies River) running out from (to) the (Malheur) lake. (R. 1946.)

We would follow along in those channels and set our traps in different places as far as we could go with our boats. (R. 1946-1947.)

I trapped in the spring one year and I had pretty good luck.

The reason we do not trap in the spring is because the Game Warden won't allow us to do it.

In the springtime we would not have quite as much trouble with the weeds.

I never paid any attention to the draft of the boat; there were generally two of us in the boat.

I think the propeller was 11 inches high; it came right out from the rear of the boat. And the top of the propeller was under the water. (R. 1947.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff testified on cross-examination as follows:

I have gone in a boat once to Cole Island. I have never been to the east of Cole Island in a boat. (R. 2006.)

Mr. GEORGE M. BENSON, called as a witness for the defendant, testified in substance as follows:

When I became Game Warden in 1918 (R. 2509) my duties required me to report on conditions of the (Malheur) lake; conditions of the bird colonies and locations; notice the food conditions; trespasses; and various things.

I patrolled that area east of Graves' ridge, so-called, in different ways. I patrolled the outside of the Reservation during the cold weather against poachers, and in high-water years on motor cycle around the outside edge of the lake.

I was with Mr. Triska, and that was the way he did it. I did not carry a boat on my motor cycle; I did not see him carrying a boat on his motor cycle; I never tackled a job like that.

During high-water seasons I patrolled the inside of the (Neal) meander line with a boat—a rowboat—and motor boat; in the wintertime I generally went on foot. The ice extended over Malheur Lake; it froze up solid during the wintertime, sometimes 20 inches; I skated around when there was snow on the ice; if there was no snow I went on foot.

I kept the boats up on Springer's place. (R. 2510.) For the first year or two I kept the boat near my cabin in the waters of the Blitzen River. The boathouse is up there on the Spring Branch, which is part of the Blitzen River, where the waters of the Springer's Spring flow into it, as shown on Plaintiff's Exhibit 3. I kept the boat in that boathouse at that time.

We did not have any boat those first years. The boathouse was built about 1926 or 1928—about along in there. (R. 2511.)

I got the boat out in the (Malheur) lake from the boathouse by following the channel of the Blitzen River. I had an Evinrud outboard motor.

In the spring months I patrolled practically all the open water. (R. 2511.) I do not remember but one time going around there east of Pelican Island, and I had difficulty at that time. (R. 2511–2512.) That was after I was Game Warden. That time I went around the southerly end, following it around there [indicating on map, Plaintiff's Exhibit 3]; leaving the boathouse I traversed down the Blitzen River to the (Malheur) lake, going in an easterly direction—easterly of Cole Island—around Pelican Island; right through this slough indicated on map, Plaintiff's Exhibit 3, which is northerly of Sections 27 and 28, T. 26 S., R. 32 E., south of the lake; right in where this artesian well is; I followed along that course easterly of Cole Island and continued easterly to the southerly side of Pelican Island.

Mr. LILJEQVIST. Q. As you are pointing out on the map (Plaintiff's Exhibit No. 3), you traversed an area east of Cole Island, thence you went easterly to a point in the vicinity of a well as shown on Plaintiff's Exhibit 3, on the south end of Pelican Island?

A. Yes; some place along there. (R. 2512.)

I then went northerly east of Pelican Island and crossed to the west at the north end of Pelican Island, returning right across the (Malheur) lake from Pelican Island toward the Blitzen River. That was in the early spring of one of those high-water years, about 1922; I do not remember (exactly) the year; I think it was the same year that I took the party of State and Government men on the lake in the boat, in which party were Doctor Hibbard, Stanley Jewett, Mr. Marr, Mr. Staley, and Mr. and Mrs. Liljeqvist.

Mr. LILJEQVIST. Q. We were all in that boat of yours, weren't we?

A. Yes. (R. 2513.)

There was enough water at that time east of Pelican Island to float the boat; the boat could get along with about 14 or 16 inches of water.

The day that I took that group I have referred to over that lake we started out at the mouth of the Blitzen River there; I think we got in at the bridge, and we went out in the channel and took (a direction) around the west side of the scattered tule area of the lake and up through what we call Cane Island, on which we landed.

Cane Island is the higher point which is located approximately 8 inches on the map, Plaintiff's Exhibit 3, a little westerly of south of Section 27, T. 25 S., R. 32½ E., north of the lake; it is just outside the Grain Field area marked on the map. Up in that vicinity somewhere is a place that I call Cane Island.

From Cane Island we crossed the open lake to the channel in the north end of Cole Island. There we visited the pelican colony on an island north of a place approximately 6 inches on the map (Plaintiff's Exhibit 3) south (R. 2514) of the southwest corner of Section 24, T. 25 S., R. 32½ E., north of the lake; then we came down on the east side of Cole Island to this channel right there [indicating] a little south of the north contour of Cole Island, marked on Plaintiff's Exhibit 3, where we nearly turned over there, and then cut into the main lake to the boat landing.

I do not remember the depth of water that we found on that trip; I did not make any note of the depth of the water. (R. 2515.)

I do not remember but one time in hitting the banks out there at Windy Point in a boat since I have been in the country; that was the year I made that trip in the springtime. I landed at one place and I had difficulty in getting out, and the wind was blowing in that direction too, and it raised the water. I think that was in 1922.

I could not say for sure that the water came back again as high as it was in 1922. I believe that was the highest year (R. 2516), but I am not positive about it (R. 2517).

As supervisor for the Government, I have taken quite a few people out in boats; they have gone for the purpose of seeing the birds. I have not done that very many times in the last 10 years—too dry. I don't know about a lot of people taken out in the lake by my predecessor.

Mr. LILJEQVIST. Q. With the water as it was in 1922, there would not be any difficulty in taking a boat and outboard motor—in taking people for (R. 2528) sight-seeing over that lake?

A. No; in as small a boat as I was using there would be no trouble.

Mr. COLLINS. Where do you mean?

A. Certain places—you'd have to keep to the channels where the water went up again some place all right, but that's the only place you could get to the lake. (R. 2529.)

Cross-examination:

In connection with my patrolling at the Reserve from the time I have been Warden, the greater part of it has been done by other means than by boat. By far the greater portion has been by other than boat. It depended upon the condition of the Reserve, where I was going, and what I was about to do. (R. 2535.)

Mr. COLLINS. Q. In your patrolling work with the use of a boat, did you have any difficulties at any time?

A. Oh, yes.

Q. What was the nature of those difficulties?

A. Well, just the shallow water.

Q. You would find that at all times, would you?

A. Yes; at all times.

Q. When you went patrolling, you usually went in the spring-time, in high water?

A. In nesting season.

Q. When it was high water; is that true?

A. Yes.

Q. You would not attempt to go out in low water?

A. No.

Q. Have there been times when you have started out and had to return because of shallow water?

A. Yes. (R. 2536.)

When I would go out patrolling with a boat, generally I would endeavor to follow some slough or channel; and if I did not do so, I would expect to have some trouble.

When I took the trip in the boat west of Pelican Island in 1922, I had difficulty in a few places. It was crowded and I had to (R. 2537) ride in the front of the boat, so as to have the boat kind of level; the engine was in the stern of it. I had to get way up in front of the boat. I had a rope that I steered the motor with. In the east part of the lake the mud was not very soft; it was hard for 3 or 4 inches, soft mud on top of the hard stuff. When I hit a place on the east part, it was real hard ground and I had to get out. I got out several times and got the boat off of it.

There were not so many years until this dry period started in when I could not go east of Cole Island in a boat. I do not know when the dry period started in—back in about 1919 or 1920. My boating was confined solely to the nesting periods of the birds—what boating I did. (R. 2538.)

g. 1920–1931

Mr. JEFF D. BILLINGSLEY, called as a witness for the plaintiff, testified in substance as follows:

I have been duck hunting in the last 8 or 10 years on Malheur Lake. (R. 384.) We had no boat at the time I was hunting. We were stationed at the Reserve, and it did not require a boat. There was a point that seemed to run back between a couple of sloughs. I have forgotten the name of the place, but I think it was Pelican Island and some other island, but I would not know them apart and probably this was one end of them. We were hunting in the fall. (R. 385.)

Mr. JAMES HENRY GIBSON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

Mr. LILJEQVIST. Q. Now, has George Benson, the Game Warden been around with his outboard motor over this area that you cut grass on in the last 10 years?

A. Well, I have never seen him there with it.

Q. He has an outboard motor that he runs around there in?

A. He goes into the creek and into the lake with it, yes. (R. 1179.)

2. Harney Lake

a. In general

Mr. WILLIAM CAROL CECIL, called as a witness for the plaintiff, testified in substance as follows:

I have never been out on Harney Lake in a boat, and I have never seen anyone else on that lake in a boat. (R. 236.)

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

I have never seen any boats around Harney Lake. (R. 634.)

Mr. GEORGE H. BOLLENBAUGH, called as a witness for the plaintiff, testified in substance as follows:

I rode in a homemade boat just once on Harney Lake. I believe the Brown boys made the boat at the time they were building Doctor Hibbard's house. They, together with Mr. Henry Welcome were down on the lake. We found the boat in what is known as the Hughet Spring Branch there that runs through the edge of the Sizemore place. I think we went down the channel from one of the

big spring branches; we did not go very far; probably three-quarters of a mile out in the lake. I do not remember the season of the year or the year in which that occurred. (R. 1404.)

Cross-examination:

I do not remember just when I went up into that country in a boat. We did not row right across Harney Lake, we just went out in the lake. (R. 1407.)

b. 1890–1900

Dr. Llewellyn Eugene Hibbard, called as a witness for the plaintiff, testified in substance as follows:

I have been out on Harney Lake from time to time in a boat. (R. 1620.)

c. 1900–1910

Mr. Willis George Bardwell, called as a witness for the plaintiff, testified in substance as follows:

In 1900 I saw a canoe, it was dug out of wood, it was a dugout, on Harney Lake. I do not know the name of the man who owned it but he was a plume hunter. He hunted for egrets, and birds of that species, that was a legitimate occupation in those days. (R. 952.)

d. 1910–1931

Mr. Stanley G. Jewett, called as a witness for the plaintiff, testified in substance as follows:

I have gone down to Harney Lake, but I have never had occasion to have a boat on that lake. I do not think that I have ever seen a boat out there. (R. 2001.)

3. All lakes

a. In general

Mr. Lee Minis Caldwell, called as a witness for the plaintiff, testified in substance as follows:

I never did use a boat on either of the lakes. (R. 148.)

The only boat I ever saw there was after the break occurred in the Sand Reef. We went to the Narrows to play for a school exhibition; I was in the band; there was a boat there in the water at the Narrows, and a bunch of the boys got drunk and one slept in the boat, but I would not tell you who he was. The boat, just a skiff, was anchored or tied up. I suppose it was used for a sort of a ferry. There was a bridge across there at the Narrows at the time this boat was there. (R. 148.)

During the time that I was in there on the lake, we never got any supplies that were transported on the lake. (R. 149.) We always

took our supplies with us. I never saw any boat on the lake to bring any supplies in on. (R. 150.)

Mr. SCHUYLER WHITING, called as a witness for the plaintiff, testified in substance as follows:

I have never been on the lakes in a boat. (R. 181.)

Mr. FRANK WHITING, called as a witness for the plaintiff, testified in substance as follows:

I have not seen any boats on either Malheur or Harney Lakes. (R. 195.)

Mr. JOHN GARDNER, called as a witness for the plaintiff, testified in substance as follows:

In all my experience in this community, I never have heard of anyone using these lakes to freight on. It is not practical to use it for that. I have never seen a boat on it (Malheur Lake) that carried freight. (R. 281.)

In so far as the operation of boats is concerned, the flood waters do not help very much (R. 282), because increase in water does not increase depth but area only. (R. 283.)

Mr. WILLIAM HANLEY, called as a witness for the plaintiff, on redirect examination testified in substance as follows:

Mr. BLACKMAR. Q. In all the times you have known these lakes, have you ever known of any commerce being carried on these lakes in boats?

A. No; not unless a trapper had some. (R. 1396.)

Recross-examination.

Mr. LILJEQVIST. Q. Well, if a trapper went in and got furs on this lake and took them out in his boat and sold them, that certainly would be trade, wouldn't it?

A. That is commerce, yes. (R. 1396.)

b. 1880–1890

Mr. GEORGE WASHINGTON SIMMONS, called as a witness for the plaintiff, testified in substance as follows:

I never used a boat on any of those lakes. (R. 1748.)

c. 1900–1910

Mr. J. L. CAREY, called as a witness for the plaintiff, testified in substance as follows:

I have done very little hunting in Malheur Lake and I have never used a boat (R. 799); some of my friends have had home-made, flat-

bottom, low boats there; they would take heavy planks and bend the boats in at the front.

I have never travelled in a boat on Mud Lake or Harney Lake. (R. 800.)

d. 1910–1931

Mr. FRANCIS W. TRISKA, called as a witness for the plaintiff, testified in substance as follows:

In the performance of my duties (as Warden of the Lake Malheur Bird Reserve) I had a Mullins, 14-foot compressed air boat, that means with the air compressed in; and I had a canoe.

I had a little outboard motor on the boat; it was just screwed on; it was demountable (R. 2197); there was no hinge on it; the motor was not hinged so that it could be raised up.

I kept the Mullins boat at Springer's Spring. At the place called the Sodhouse (Spring) in the testimony here. During the years 1915, 1916, 1917, and 1918 the territory I covered in that boat was principally northeast of Springer's Spring, or the Sodhouse Spring. That was the largest body of water there (Malheur Lake) at that time, and that was where I could use the big boat; then I always dragged the canoe behind the (Mullins) boat, to go into different little channels; I would wade and pull the canoe around to places I wanted to go to.

I was not able to use that (Mullins) boat down there in all seasons of the year; I used that boat (the Mullins boat) mostly during April, May, June, and July.

I think the draught of that boat with the engine on it would be about fourteen inches, as near as I can recollect, with all my paraphernalia in it; that was about the limit. (R. 2198.)

I have been close to Pelican Island with that boat, but I never could get to it with the boat. I always would have to beach the boat out on the sand, and then take the canoe, and drag it part of the way. (R. 2199.)

I could get closer to Cole Island with the big (Mullins) boat than I could to Pelican Island.

I policed the western half of the (Malheur) lake with a motor cycle. I would police that section of the lake in this way. I would take the canoe, if I wished to go to Mud Lake or to go to Harney Lake, and put it on the motor cycle, and operate it on the motor cycle as far as I wanted to go; then I would leave my motor cycle wherever I could get to it, and sometimes I would carry the canoe to the channel, and sometimes I would drag it through the channel.

The canoe is one of those canvas canoes; I think their actual weight was 75 pounds. It was not a Petersborough; I do not recall the name.

The way I policed the west end of Malheur Lake section of the (Lake Malheur) Bird Reserve (R. 2199) was this way: There were

places I could get close to the patches of open water, and I could wade across and get on some salt grass knolls and tule beds.

I could not take my motor boat up into that (western) part of the (Malheur) lake. (R. 2200.)

Cross-examination:

I went in the canoe once from the Narrows down to Harney Lake.

I did not go from the Narrows up to the open waters of Malheur Lake with the canoe. (R. 2201.)

4. Sodhouse Spring–Springer's Spring

a. In general

Mr. DARIUS HYNSON SMYTH, called as a witness for the plaintiff, testified in substance as follows:

I think old man Springer might have had just a little old flat boat that he towed around in the spring, but that was not in the lake; that was in the Springer place, but it was not ever in the lake. (R. 467.)

Mr. PRIM ORTEGO, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have seen a boat at Springer's (Spring). (R. 529.)

Mr. JAMES M. DALTON, called as a witness for the plaintiff, testified in substance as follows:

I used a boat at Springer's Spring a little bit, just across some channels that were too deep to wade. (R. 612.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In 1912, when I went down to the (Malheur) lake with Mr. Finley, he was State Game Warden at that time; there were boats at the Narrows tied up by the bridge, and one or two boats at Sodhouse Springs. (R. 2004.)

In 1912 I went in a boat from Sodhouse Springs down the (Blitzen) river to the edge of the (Malheur) lake where we could see some large bodies of open water. I did not go with the Benson party at all.

Mr. LILJEQVIST. Q. Now, in 1922 do you know where the water came with reference to these boats on the south side?

A. I saw the boats on the water at that time, but I couldn't just say where the water came. (R. 2005.)

5. Mud Lake

a. In General

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I do not think people used boats very much to hunt with on Mud Lake. (R. 636.)

Mr. WILLIAM J. DUNN, called as a witness for the plaintiff, testified in substance as follows:

I have had a boat down there at Mud Lake which was used some, but up at the other place at the mouth of the Blitzen (River) I never did have a boat. (R. 825.)

The boat I had at Mud Lake I would hunt with some; I like to hunt. When I first took it up, the water would reach from Mud Lake down to Harney Lake, and it would be handy to have a boat there.

In getting the boat into the water, you would have to put it in some slough to get it right off. If you didn't get it in the slough, you had the tules and grasses to run through on the edges; when you go near the edges, you occasionally have to get out of your boat and drag it around. The boat I used was a little flat-bottomed homemade skiff, and we used oars. (R. 826.)

b. 1890–1900

Mr. CORTIS E. ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

Down at the Narrows and Mud Lake (R. 1047) I have used homemade boats. The first one was just a flat, square, homemade boat or skiff pointed at each end. I just had one boat, but at different times I had different boats because from time to time they would rot away in the course of the years. (R. 1046.)

In the low-water period there were only a few places that you could operate a boat, and that was in the channel at the Narrows and in the little lake below the Narrows named Mud Lake. I have been in Mud Lake in the boat. (R. 1047.)

Mr. BLACKMAR. Q. Has Mud Lake any banks to it?

A. Well, yes, there are banks; when the water is up there are banks, especially on the east side there is a high ridge that runs down there, and it has greasewood and salt grass on it. There is a high bank there, and when the water is up it is easy to land a boat; and when the water recedes you have to drag the boat through the mud before you can get out.

In order to land with a boat we would have to wade probably 30 to 50 yards.

Mr. BLACKMAR. Q. Now, at other places where you have been in that boat, have you found that you had to drag your boat for a greater distance than 30 yards in order to land it?

A. That would depend upon the season. When the water is up there is what you term sloughs or low places, and you can follow around and land onto a place, and then follow a ridge down and get out; of course, there are places that you couldn't do that; you couldn't land without dragging your boat, or without wading for quite a distance. (R. 1048.)

Cross-examination:

I rowed in my boat all the way down the channel into Mud Lake. There was one place just before we got into Mud Lake during the low water, that you could not get across; other times you could row right through. There was quite a low channel, when that filled up there was a current that went in there by the channel. It was approximately half a mile long, and when that filled up and ran over, there is a high place in the channel, and it runs over that (R. 1063), and then there is a current, and during the high period you could row right through—you did not have to row, the current would take you right down. After I left Mud Lake I went down beyond in a boat. There is quite a ridge that runs all the way around Mud Lake, and there are channels leading out, and when the water rises high enough it goes over that channel, and then runs off from there and goes into Harney Lake. I went down to that channel to see what it was like. I did not go (R. 1064) duck hunting; but I went in the boat. I found lots of open water; it is all open water when the water is high.

Mr. LILJEQVIST. Q. Now, this map, Plaintiff's Exhibit 4, on which the meander line has been run, indicates that when you get about southwesterly from Mud Lake, about half a mile, there was a long bay or opening extending southerly; do you remember that?

A. Yes, sir.

Q. Here is the Sand Reef away down here. [Indicating on map.]

A. Well, I would say right about in here. [Witness indicating on map.]

Q. That is about half a mile? (R. 1065.)

A. Half a mile or a mile.

Q. From the Sand Reef?

A. From the Sand Reef; yes.

I went down the channel when there was a high-water year. I do not remember the year, but it was around 1894, either 1894 or 1895. I saw water north and south of that channel, and east of the Sand Reef. The water spread all over the country to a considerable extent.

Mr. LILJEQVIST. Q. Do you think you would have had any trouble in those days if you had a rowboat with an ordinary outboard motor or kicker, as they call them, in going through there?

A. It runs swift after you get down about a mile from the Reef. (R. 1066.)

I have never used an outboard motor and I have not been out with George Benson, the Game Warden, and I do not know what they have been using for years at Malheur Lake until it dried up. (R. 1067.)

Mr. RICHARD A. SMITH, called as a witness for the plaintiff, testified in substance as follows:

I have been out in Mud Lake in a homemade rowboat, 12 or 14 feet long and 2 feet wide (R. 1303) that probably belonged to some

of the neighbors; I have been across the lake hunting duck eggs once or twice (R. 1301), and occasionally for hunting ducks (R. 1302).

I could touch the bottom with an oar, I would not say how deep it was, but the length of a normal touch of an oar. (R. 1302.)

The boat that I used was already in a slough there. I don't know how it got there. I don't know who owned it (R. 1302), or how many inches of water it would draw. I know nothing about boats. (R. 1303.)

Cross-examination:

I have been around (Mud Lake) in a boat; the oar we used was about seven feet long, and I have used it to push the boat along, instead of rowing it. I never paid any attention to the depth of the water out in the lake, but I knew that I could strike the bottom. I have an idea it was four and a half to five feet deep. In the edge of the tules it would run from twelve to eighteen inches or two feet.

I have rowed in a boat up toward the Narrows, but not very many times. (R. 1311.) I have rowed up to the bridge, and once I rowed up through the Narrows in a rowboat, and went most of the way to Springer's. I did not go to the open water beyond the tules in Malheur Lake. I do not remember the distance in miles easterly or northerly that I went, but I remember the location when I was in close. That was in one of the years of the nineties; don't know the exact date; we went there to hunt grebes. We rowed and pushed the boat. We would find kind of open waters, when we would go through. I didn't notice a lot of channels through there. We were hunting, and went along the open channels.

I have never been in a boat below Mud Lake in the area east of the Sand Reef. (R. 1312.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

I practically lived in a boat for eight or nine years; sometimes we would go all the way from home and hunt ducks, and I hunted birds and muskrats and grebe. A grebe is a hell diver. It is a bird with a long sharp bill, and they call it a "hell diver," but his name is a grebe. They use him for some sort of an ornament in making up hats or some such stuff as that.

I used the boat around there in both high and low water. (R. 1321.) There is not much difference in the operation of a boat in high and low water around Mud Lake, except at the landing. In Mud Lake, in the open part of the lake, there was open water, but what was called the channel would dry up, but there was always water from there on along the natural bed of Mud Lake. In high water you could go out into those necks and lakes below, and land a boat across the island, over at Newells Island. (R. 1322.)

I had different kinds of boats.

Mr. BLACKMAR. Q. And you and some of the other boys went to school that way?

A. I used to go to school. I had a boat that I used as a push boat with a pole.

I stood up in the boat. If I sat down, it would turn over. I could go so much faster than I could in a rowboat, and I used that. (R. 1325.)

Cross-examination:

I did not go in a boat down to the lake east of the Sand Reef. I went up towards the Narrows, over towards Richard A. Smith's place. There was a little ridge in there at high water that got to be an island, and I used to go over there and shoot ducks. That place was at the end of Mud Lake, and straight across two miles and a half.

Mr. LILJEQVIST. Q. Do you mean this same (Richard A.) Smith who was just on the stand?

A. Yes. He lived right across. (R. 1329.)

I do not know for sure who assisted in the cutting of the Sand Reef. He (Richard A. Smith) probably could give you more information than I could on that. I never could figure out how many settlers there were there. There were different ones that talked of it. You know, a kid doesn't pay a great amount of attention to what is going on, and especially when there was duck hunting; so you couldn't expect me to get my nose in that ditch question. (R. 1330.)

Dr. LLEWELLYN EUGENE HIBBARD, called as a witness for the plaintiff, testified in substance as follows:

I was down to Mud Lake in a boat shortly after I came here (1899). The first day I pulled into the Narrows, I pitched my tent, took my little folding canvas boat out, and started for the Narrows, to go down to Harney Lake, and across Mud Lake.

Mr. BLACKMAR. Q. Now, as you saw Mud Lake at that time, just describe its general appearance as to vegetation and so forth. (R. 1612.)

A. It was a vast body of water that season—that was the season of 1899; that was my first sight, but I should judge that the water was what was called in court, one of those high-water years. At least, I had never at any other time seen the water at any higher level at the Narrows, or about Mud Lake than it was that season, so that it had the appearance to me of a very fine, large lake. There wasn't any obstruction for a couple of miles. I rowed straight toward Harney Lake from Charlie Haines' store at the Narrows; and I came to a point that we called Cane Island. It was a little island that had very tall grass, eight or nine feet tall, of a whitish color, and we called it Cane Island; whether that was the name that was given to it by others, or not, I don't know, but we landed there and had our lunch on that island. It was the first place we came to going toward Harney Lake on which we could land the boat. (R. 1613.)

Cross-examination:

I reached the Narrows about the 10th of June, 1899, and I camped at Charlie Haines' store at the Narrows; at that time I went in a boat

from Charlie Haines' store (R. 1626) to the west on Mud Lake and then (later) on Harney Lake. I did not go in a boat all the way through Mud Lake down to Harney Lake. I put in a whole day trying to go down there to Harney Lake, but I found too many interesting things, and when the day was ended I was several miles from there. I had no difficulty in going as far as I went in the boat. (R. 1627.) That was the first time I saw Mud Lake. (R. 1626.)

From Cane Island that I have referred to I went straight down the channel to the west as far as I could; I think the channel swung; we bore off on the channel afterwards; the channel made a swing, and we went on a straighter line than the channel. (R. 1628.)

c. 1900–1931

Mr. LESTER MARION HAMILTON, called as a witness for the plaintiff, testified in substance as follows:

During the period of 1905–6, I had occasion to use a boat a great deal on Mud Lake; following that period after I came up into this upper country, I went back and went on the west portion of Malheur Lake one spring, but not in the same boat.

During that early period, 1905–1906, I lived at one time west of Mud Lake and we crossed Mud Lake quite frequently through the Narrows by boat. This was just a small flat-bottom rowboat. We used oars. We had difficulty in operating the boat around Mud Lake only when we would get to the land. We always had difficulty then. It was a wading job; we had to wade out; the shore line was so shallow that we could seldom push the boat up close enough without wading out. There would always be some water between us and the shore; the distance would be all the way from five to eight feet (R. 629), which is according to the slope of the land. (R. 630.)

We used the boat on Mud Lake during the seasons covering the period 1905–1906. (R. 629–630.) We didn't ground out in the middle of the lake while in the boat, but we got stuck in the tules plenty of times. (R. 630.)

Mr. CHARLES E. DILLMAN, called as a witness for the plaintiff, testified in substance as follows:

The only boat we used was a trip or two we made on Mud Lake. We went down from Malheur Lake to Mud Lake, and the boat we used was an old deserted one that we found there in the slough (R. 1863) on the north side of Mud Lake, about half way to the lake. We found it there on Mud Lake and used it around Mud Lake. We never got out of Mud Lake with it; we did not get out of those immediate sloughs where the boat was located. As I remember, we used some old boards for oars. There was not much oars about it. We pushed the boat through the tules part of the time, and when we got in the open water we kind of oared the thing along. (R. 1864.)

Cross-examination:

We were not able to use oars in the tules.

Mr. LILJEQVIST. Q. The only way you could get through tules is to push, whether it is one foot deep or ten feet deep?

A. Yes. (R. 1864.)

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, testified in substance as follows:

As a boy I experimented some with boats; I have been up the slough there toward Malheur Lake a ways, but I was at Mud Lake mostly.

I never had much trouble with it (the boat) in Mud Lake, as long as she stayed in the deep water; if she got out on the edge by the tules I would get into the shallow water. (R. 2220.)

I have taken a boat west from Mud Lake down through that channel; it would be in the spring of the year when I made the trip; in places there was much current through there, and in other places there was not. We came back in the boat, but we did not have any trouble getting it back on account of the current. I used oars; I strong-armed it (the boat) mostly. It was just a homemade boat. (R. 2221.)

Mr. GEORGE M. BENSON, called as a witness for the defendant, on redirect examination testified in substance as follows:

The patrolling that I did was while I was supervisor of the (Malheur) lake. I never was on Mud Lake in a boat. (R. 2541.)

6. The Narrows

a. In General

Mr. THOMAS GEORGE HOWSER, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I have never crossed the Narrows in a boat. (R. 229.)

Mr. CURTIS E. ELLIOTT, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I used the boat down at the Narrows and before the bridge was built there I used to ferry people across it frequently. I did not charge for it; I was a kid, and they used to give me a half a dollar. (R. 1058.)

Mr. LILJEQVIST. Q. People crossed the Narrows then, and some compensation you got for it, did you?

A. Yes, sir. (R. 1058.)

Mr. LEROY BUNYARD, called as a witness for the plaintiff, testified in substance as follows:

I have hunted ducks and geese there at the Narrows in a boat. I went in at the hotel with teams and buggy. We went down, and they had all kinds of boats there, most any kind you wanted to use. You could use a boat in the high water in the spring of the year,

but in the fall of the year, it was not necessary to have a boat—that is, the most years.

Mr. BLACKMAR. Q. Those years when you went there in the fall of the year in connection with your shooting, did you go out and wade through the tules and do your shooting that way?

A. Sometimes we would take the boat out a ways as far as the water lasted, and then we would go afoot with gum hip boots.

Q. During the years that you were going down there to the Narrows, have you ever seen the lake entirely dried up down there?

A. Yes, sir. (R. 1155.)

I have seen the water up over the road to the grades. I don't recall of having seen it up to the floor of the bridge. Along in the nineties I believe there was water there for several years every year. I don't just recall how many years, but I know there was a little water there at the Narrows, and since that time, it has been getting dry ever since. (R. 1156.)

Mr. PAUL WARE, called as a witness for the plaintiff, testified in substance as follows:

I used to use a boat in order to get across the Narrows to go to school. (R. 1321.)

Mr. GUY L. HEMBREE, called as a witness for the plaintiff, testified in substance as follows:

From time to time while we lived there at the Narrows from 1890 until we moved away in 1899 we used a homemade rowboat about sixteen feet long for different purposes; used to hunt some; when we first went down there we used to go across the Narrows. (R. 1334–1335.) I remember of having only one boat of my own.

I lived down there at the time Mr. Ware did. (R. 1335.)

Mr. GEORGE H. BOLLENBAUGH, called as a witness for plaintiff, testified in substance as follows:

I rowed in a little homemade boat at the Narrows at one time from there at the bridge; we were hunting duck eggs. That is the only experience I have had with a boat on that (part of the) lake. (R. 1403.)

Cross-examination:

When I made the trip in the boat from the bridge at the Narrows, we rowed around through the tules hunting. I did not visit any of these people up there (in the west end of Malheur Lake); we were not gone very long.

We saw open water by the Narrows, in the vicinity of the Narrows. I did not go up as far as Springer's place. We did not go hardly over half a mile up from the Narrows. (R. 1407.) We found duck eggs, and I believe the other boys took the eggs.

Mr. LILJEQVIST. Q. What were they gathering eggs for? There is a lot of evidence about that. I don't suppose we have it in the record.

A. I suppose they ate them. The reason I happened to be with these boys, I used to go over to the Narrows after mail, and I sometimes would go out with the boys and would be late for the mail, and get chastised when I got home. (R. 1408.)

Mrs. FAY COMEGYS, called as a witness for the plaintiff, testified in substance as follows:

As a girl, I experimented some with a boat on the lake down there (at the Narrows). We had a small homemade rowboat. We just rowed around in the lake for pastime.

Mr. BLACKMAR. Q. Just children playing around there?

A. Yes, sir. (R. 1412.)

We usually operated the boat in the spring and in the summer, but not in the fall because there was not any water. (R. 1413.)

Mr. STANLEY G. JEWETT, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

In 1912, when I went down to the (Malheur) lake with Mr. Finley, he was State Game Warden; at that time there were boats at the Narrows tied up by the bridge, and one or two boats at Sodhouse Spring. (R. 2004.)

Mr. LILJEQVIST. Q. Now, in 1922, do you know where the water came with reference to these boats on the south side?

A. I saw the boats on the water at that time, but I couldn't just say where the water came. (R. 2005.)

Mr. HADDEN ELLIOTT, called as a witness for the plaintiff, on cross-examination, testified in substance as follows:

Mr. LILJEQVIST. Q. Have you gone in a boat from the Narrows out to the open part of the (Malheur) lake?

A. Yes.

I could not say how frequently I went there. I used to pretty nearly live in the boat when I was a kid around there. I went hunting. (R. 2223.)

Mr. ALPHENA VENATOR, called as a witness for the plaintiff, on cross-examination testified in substance as follows:

I went up and down the channels from the Narrows in a boat. I do not think I went (R. 2328) half a mile east to the Narrows (R. 2329).

R. SURVEY OF THE HISTORY OF THE HARNEY-MALHEUR LAKES REGION, 1825–1872—DR. R. C. CLARK

EVIDENCE RELATING TO

1. Goose Lake

Dr. R. C. CLARK, called as a witness for the plaintiff, testified in substance as follows:

I am familiar with Goose Lake, located in the State of Oregon; it formerly was on a certain trail between the east and the Oregon country.

In 1846 the Oregon Legislature authorized the survey of a road from the Willamette Valley by way of the Umpqua and Rogue River Valleys to Klamath Lake, southeastward to join the Oregon-California Trail. Jesse Applegate headed this expedition and met the overland immigrant train of 1846 at Bear River on the Oregon Trail, and induced some of the immigrants to follow him over his newly discovered road to the Willamette Valley. This trail then became known as the Applegate Cutoff, and is still in use by immigrants bound for Oregon, especially those intending to reside in the Rogue and Umpqua River Valleys. It started approximately where Winnemucca is located to-day, and went to Goose Lake by way of Klamath Lake to the Rogue River, and thence to the Umpqua, and thence to the Willamette.

That immigrant road passed through Goose Lake. The accounts of people indicate they came through the Goose Lake region. I do not know that they crossed it in 1846, but they came around at least by Goose Lake. Subsequently the trail quite evidently did go through Goose Lake, because it is shown by the photographs, when Goose Lake dried up, and I have seen those photographs. It is well known among historians also. (R. 321.)

2. Dr. Clark's report on the history of Harney-Malheur Lakes region

Dr. R. C. CLARK, called as a witness for the plaintiff, testified in substance as follows:

I have prepared a report from certain historical documents with reference to Malheur Lake and Harney Lakes.

I have sought to find all possible documentary material I could. I will give the documents upon which I have based my opinion in this report.

The history starts with the Peter Skene Ogden Journal, and Peter Skene Ogden was a trader who operated all over the Oregon country, but he was frequently over the Snake River and in this region, and he kept journals, some of which were preserved, and one of these is published as the Peter Skene Ogden Journal. (R. 321.) The original Peter Skene Ogden journal is in the archives of the Hudson Bay Company in its London House. Now, this copy was taken out by Miss Agnes Laut. She copied it and then it has since been published, and it is the published copy that we have, which is a copy of her copy. It is in the Oregon Historical Society, in Volume 11.

The next document is a part of the journal of John Work, who was a trader and was in this section in 1831. After 1831 and up until 1859 we have not any satisfactory documentary evidence of anybody being in the country.

(NOTE.—See pages 1040–1048, of this Abstract, for additional data recently discovered by Dr. Clark.)

It is pretty well established that the so-called Meek Wagon Train came down here in 1845, but we have not any satisfactory records of that.

The next document is a report, or there are two reports of a Captain Wallen of the United States Army. The document on that is House Executive Document, 36th Congress, First Session, Volume 9, Document No. 65. And in that you will find the reports of Captain Wallen and Topographical Engineer Dixon. They were both here in 1859; and then the next year a Major Steen, and the same Topographical Engineer, Dixon, were in the country and they made reports that are in Senate Executive Document, 36th Congress, Second Session, Volume 2. And in the 37th Congress, Second Session, in the Senate Executive Documents, one of them is the report of Joseph Dixon.

And then in 1864 some other Army officers were in this region, and their reports are in the Report of the Adjutant General of the State of Oregon for 1865–1866, published by the State of Oregon in the year 1866. There is a very important report there of Captain Curry, and then there are other Government documents and messages for 1866–1867 of the War Department, Serial No. 1285. We have the report of General Steele of 1866.

Those are the main documentary reports.

I have the original copy of my report which I will now read into the record. (R. 323.)

After the discovery of the mouth of the Columbia River by Robert Gray in 1792 that stream became the goal of overland exploration that started from the Mississippi River or Canada. In 1805, Lewis and Clark, by following up the Missouri River and striking out from one of its sources through the Rocky Mountains, reached the Clarks Fork of the Columbia and thence traveled down it and the main stream to the Pacific Ocean. Farther north David Thompson, sent out by the North West Company, reached the source of the Columbia River in 1807 just above the 49th parallel, and in 1806 its Kotenai Fork and other tributaries in the eastern part of Washington and Montana. The members of John Jacob Astor's Fur Company, who came out and returned overland in the years 1810–1813, discovered passes through the Rocky Mountains south of the one followed by Lewis and Clark, and first made use of the Snake River as a highway into the Columbia River country.

In 1811 Astor's Pacific Fur Company established Astoria, near the mouth of the Columbia, as the main post from which to carry on the search for furs in the interior region watered by the Columbia and its tributaries. Its successor, the North West Company, also used Astoria as a base from which to send its trappers and traders into the back country. These men established interior posts at strategic points, like Fort Nez Perce, or Walla Walla, in 1818, from which hunting and trapping parties could be sent each year into

remote beaver-bearing grounds. One (R. 324) of these expeditions, known as the Snake River expedition, was sent each year from Fort Walla Walla to trap and hunt for furs into the region watered by the Snake River and its tributaries. For several years, 1823–1830 (R. 325), this expedition was led by Peter Skene Ogden, a chief trader, first for the North West Company, and then for its successor, the Hudson Bay Company. He discovered and named the Malheur and other tributaries of the Snake, and his search for furs in time led him to Great Salt Lake, westward to Shasta Mt., and then northward to the Klamath Lake region.

The main routes of travel followed the chief tributaries of the Columbia and left the great central region between the Snake River and the Cascade Mountains to one side. Thus the country watered by the Malheur and Owyhee Rivers and the valleys to the west of their sources were never on the main line of travel and were not often visited by white men before 1859. The Oregon Trail, over which thirty or forty thousand people passed by 1860, lay not a great distance east and northward from Harney Valley, yet that Valley remained unknown to those thousands who were seeking homes in the valleys west of the Cascades.

The trappers and hunters, ever seeking more fertile beaver grounds, were the first white men to penetrate the central Oregon valleys. The first of these about whom we have any knowledge was a French Canadian by the name of Antoine Sylvaille, who in 1825 trapped the river that with a corrupted spelling, Silvies (R. 325), now bears his name. He was sent out by Peter Skene Ogden, who, in 1825, followed him into the region by way of the Malheur River with a trapping party. In the journal kept by Ogden (reference Oregon Historical Society Quarterly, Vol. XI) we find the first known account of the Malheur and Harney Lakes. From this diary we learn that Ogden and his party were in the vicinity of the Malheur and Harney Lakes from October 19 to November 4, 1826. To (R. 326) quote from the journal (page 207): "November 1st at sunset we reached the lakes. A small ridge of land, an acre in width, divides the fresh water from the salt lakes. These two lakes have no intercourse. The fresh water has an unpleasant taste. One mile wide, 9 long. In this (salt) lake discharge Sylvailles River and two small streams."

I might interpolate here, as that is a little confusing. That "salt" is put in parenthesis presumably by the copyist, and it would sound as if he was referring to the fresh-water lake, rather than the salt-water lake.

It goes on to say: "But it has no discharge. Salt lake at the south end is 3 miles wide—all hands gave it a trial but none could drink it." After taking a west course along this salt lake Ogden estimated it to be "5 miles wide and deep" and "10 miles in length, its borders flat and sandy." He further records that on November 3rd snow fell from 4 a. m. and then on November 5th "it rained all night and day." The sketch map that he made for his journal

shows "Sylvailles River" flowing from north to south into "Sylvailles Lake" and shows only one (R. 326) lake.

Ogden's trapping expedition of this winter of 1826–27 took him as far as the Pitts River country in California. He returned by way of Klamath Lake and on June 8, 1827, he camped at the end of the "salt lake" seen the previous fall. "The water," he notes, "is very high. The waters of Sylvailles River and lakes discharge into it. The stench of the lake is terrible." (Page 221.) From the description of the lakes later to be named Malheur and Harney given by Ogden it seems that when he first saw them in November of 1826 the water was low; Malheur Lake seemed to him only a mile wide and (R. 327) nine miles long, and there was no discharge from it into Lake Harney. When he returned the following June the water in Malheur had risen and was flowing into Harney Lake.

The next white visitor to reach the Harney Lake region about whom we have a record was another chief trader of the Hudson Bay Company, John Work. Traveling on horseback, he and his trapping party arrived at the lake on July 2, 1831. His journal entry for that date reads as follows (Oregon Hist. Soc. Quarterly, Vol. 14, page 309): "Fine weather. Continued our journey N. W. 19 miles to Sylvailles Lake. The road part of the way stony. The lake is usually high, and the water brackish and so very bad that it is like a vomit to drink it. There are a number of wild fowl in the lake, but they are so shy that they can not be approached. Tuesday, July 3. Warm, sultry weather, a thunderstorm in the evening. Our road lay along the lake and across a point to Sylvailles River in rather a circuitous road, nearly W. N. W. 20 miles. The road is good." It is quite evident from his story that Work reached Harney Lake, because he describes it as salty and unfit to drink, a description that corresponds to that of Ogden and later travelers. The water of Malheur Lake is never referred to in such uncomplimentary terms. He traveled around Lake Harney westward and northward to reach Silvies River.

After the visits of these two fur hunters, Ogden and Work, we have no other account of the Harney Valley and Lake region until the year 1859.

(NOTE.—See Supplemental Reports by Dr. R. C. Clark, Vol. II, pages 1040–1048, of this Abstract.)

In the meantime, however, as the result of Ogden's report, Sylvailles River and Sylvailles Lake began to appear upon maps of North America and of the Oregon country published in London. One of these famous map makers, Arrowsmith of London, placed the (R. 328) River and the Lake rightly located as to their surrounding country upon maps made as early as 1830. In the decade of the eighteen forties, when interest over the Oregon boundary controversy was at its height in both England and the United States, many books were published in both countries relating to this dispute. These contained maps modeled upon those of Arrowsmith and showed both Sylvailles River and Lake. One of the most notable of such books was that of Travers

Twiss, "The Oregon Question," published in London in 1846. Its map shows the River flowing into a chain of three lakes, the largest named "Sylvailles." These are correctly located as to the surrounding country. A (R. 328) book descrjptive of the Oregon country, entitled "Mitchell's New Map of Texas, Oregon, and California," published Philadelphia, 1846, on its map pictures Malheur River flowing from a chain of three lakes, one of them named "Sylvailles." On the map of John C. Fremont—the famous explorer, who came to the Oregon country in 1843 over the Oregon Trail and went out by way of the Deschutes River and the Klamath Lake country to California, and who approached the Harney Valley no nearer than the Snake River on the east and Warner Lake on the southwest—on his map, published in 1849 (House Miscellaneous Documents, Serial No. 544), the Malheur River is made to flow out of three lakes, unnamed, under the evidently erroneous impression that this River had its sources in Malheur and Harney Lakes.

"A map of Oregon and Washington Territories" compiled by G. E. Goddard from the exploration of Governor Stephens in 1855 is evidently based upon that of Fremont, and the Malheur River is made in the same way to head in these unnamed lakes. A similar "Map of the State of Oregon and Washington Territory compiled by the Bureau of Topographical Engineers, 1859," admits Fremont as an (R. 329) authority, repeats his errors regarding these lakes, and leaves them still unnamed.

Except for the maps we have no further mention of the Harney Lake region until 1859. In April of that year General William S. Harney of the United States Army in command of the Department of Oregon sent Captain Henry W. Wallen to explore a wagon road from The Dalles, Oregon, to Salt Lake City by way of (R. 329) the John Day River and thence over to the head waters of the Malheur, following down the stream to the Snake River. (Letter of Harney to Wallen, April 28, 1859, in House Executive Doc., Serial No. 1051, Doc. No. 65.) In his report of his expedition under date of November 25, 1859 (same reference as last, pages 209–224), Captain Wallen writes as follows concerning Lake Harney: "At an early hour on the 7th of July the column was in motion, direction east over a prairie until we came to a small stream which we crossed, and passed on to a large salt lake, twenty miles long and nine broad. We named this Lake Harney, in compliment to the general commanding the department of Oregon. We followed this lake, in which graceful sea gulls and grotesque looking pelicans were disporting, for ten or twelve miles, with much fear that our animals would suffer for fresh water, when to our agreeable surprise, in crossing over a sand ridge, and only one mile distant, we came upon a small lake of fresh water, not very good, but still drinkable; we named this Lake Stampede, as here we had some trouble with our horses." The report of Lieutenant Dixon, Topographical Engineer of this same expedition, dated January, 1860 (same reference as last, page 243) states that near the center of Harney Valley, "We came to a

much larger lake than any we had yet seen. It was spread out over a length of about 18 miles, and in breadth about ten miles. It had every appearance of being very deep, and the water was so salty that our animals would not drink it. There was a considerable stream flowing into it (R. 330) from the north, but from all appearances there was no outlet. The shores were low and sandy. This lake, when first presented to our view, was a handsome sheet of water, and we gave it the name of Lake Harney, in honor of the present commander of the department of Oregon."

Lieutenant Dixon also furnished a map to accompany his report. On this map, made in 1859, he shows Lake Harney extending east and west with a small lake named "Stampede Lake" located a mile or two slightly to the northeast of Harney Lake. The region south of the Stampede Lake he designates as "marsh country." (Senate Doc., 36th Cong., Serial No. 1031, Doc. No. 34.) From Harney Lake Captain Wallen continued the survey of the road in a northeastward direction to the Malheur River.

The next year, 1860, Major Enock Steen was sent to survey a road from Harney Lake to Eugene City. He left Fort Dalles May 24, traveling along the road surveyed by Captain Wallen the year before. He established Camp Union, 30 miles north of Lake Harney on Indian Creek (which I will identify as Silver Creek) as a main base and from that point made surveys southwestward toward Diamond Peak and northwestward toward the Deschutes River for the proposed road to Eugene City. He continued this survey until the 29th of June, when he was turned back by the report of an attack made by Indians upon the company of Capt. A. J. Smith. Captain Smith had been sent out on May 12, 1860, from Fort Dalles to the Owyhee River to protect the immigrant (R. 331) train and was attacked by Indians on June 23, at a point some 25 (R. 332) miles east of Lake Harney. The companies of Smith and Steen then united for a campaign against the Indians, and reinforcements were sent out from Fort Vancouver and Fort Dalles. The remainder of the summer until September was given over to scouting expeditions into the country around Harney Lake in a search for Indians. As a result Topographical Engineer Lieut. Joseph Dixon had an opportunity to more thoroughly explore the Lake Harney region and to describe and map it more accurately than he had been able to do the previous year. He made a complete report on his summer's activities and accompanied it with a detailed map of the section of country that he had traversed. (Reports of Major Steen and Captain Smith are in Senate Doc., Serial No. 1079, pp. 117, 132, and the Dixon report is in Senate Doc., Serial No. 1118, pp. 528–540. His map is in Senate Doc., Serial No. 1120, Map. No. 27.)

Lieutenant Dixon named Silvies River "Cricket River." Stampede Lake is described as "merely a slough" at low water, "making out from Cricket River which flows into Lake Harney near by. The lands slope uniformly with gentle grades from the base of the sur-

rounding mountains and table-lands down to Cricket River, which flows nearly through the center of the valley of the lakes."

The WITNESS. This was quoting his description of Cricket River. The company of which Dixon was a member set out on August 4, 1860, for a scouting expedition south of Harney Lake. It (R. 332) crossed Cricket or Silvies River about one mile above its mouth at which point it was "about 3 feet deep and from 40 to 50 feet wide. It flows with a sluggish current between low and marshy banks, destitute of any timber of any kind. Its water has a (R. 333) disagreeable alkaline taste * * *. From Cricket River we traveled over a low, sandy ridge that extends down from the high table-lands south of Lake Harney into the valley of New River. New River (the Donner and Blitzen River) flows nearly due north, through a valley from four to six miles wide. The exact nature of the current, as well as the width and depth of this stream we could not well determine, as its banks were bordered by low, marshy meadows and extensive tulare lakes." On this trip Dixon named Steen's Mountain in honor of his commanding officer, the only name of all those that he gave to the mountains, lakes, and streams of Harney Valley in this year, 1860, that was destined to be permanent. In his Report he noted the mistake of the map makers in placing the source of the Malheur too far west and as draining a large lake. "Malheur River," he remarks, "rises east of the main chain of the Blue Mountains, and flows a considerable distance east of its position indicated on the old maps, and does not drain any lakes whatever. The waters rising west and northwest of the surrounding mountains all flow into Lake Harney, which has no visible outlet."

Edward H. Geary, superintendent of Indian affairs in Oregon, also visited the region of Harney Lakes in June, 1860. (R. 333.) He describes the lake as 17 miles in length from east to west and about 12 miles over at its greatest width. He say that "the lake is fed by two small streams, Moose Creek (Silver Creek) from the west and Willard Creek (evidently Silvies River) flowing through a succession of tule marshes from the north. This lake has no outlet; the waters contain a mixture of salt and saleratus in strong solution and are exceedingly offensive in odor and taste. The immediate surroundings are dreary and barren in the extreme. No fish live in it, though (R. 334) Willow Creek, its tributary, contains immense numbers. This stream drains a beautiful valley, commencing 12 miles north of the lake, having an area of 5,000 miles." (Senate Ex. Doc., Vol. 1, 36th Cong., 2nd Session, p. 395, No. 77, Report of Sect'y of Interior.)

From these descriptions of the Harney Lake region just cited for the years 1859 and 1860 it seems clear that at about the time Oregon became a State there was but the one clearly defined lake which all narrators agree in calling "Harney Lake," and that eastward of this Lake lay marshy, swampy ground that had no appearance of being a well-defined lake. The name "Malheur" had not as yet been applied to any body of water just east of Harney Lake. As

yet, to this date, 1859, no visitor records any measurement of the depths of Harney Lake nor has furnished any estimate of its depth. The most that any of them ventured to say is that it appeared to be "deep."

After the withdrawal of the United States Army forces from (R. 334) Harney Valley at the end of August, 1860, we have no further record regarding the region until 1864. In that year the adjutant general of the State of Oregon sent out punitive expeditions against the Indians of eastern Oregon. Two of these expeditions reached Harney Valley.

The first of these expeditions commanded by Lieut. James A. Waymire, set out in March, 1864, from Camp Lincoln on the South Fork of John Day River southward to Silvies River. His description of weather conditions and the appearance of Harney Valley is the first that we have for this time of the year. He writes: "On the 27th of March, 1864, we encountered a severe snow storm, which prevented our travelling on the following day. Following on the trail, we reached Harney Valley on the 30th, having marched ninety miles (R. 335) over a route which for that season of the year was, for cavalry bad beyond description. Harney Valley is about sixty miles south of Canon City. On reaching its northern border we found a body of citizens, fifty-four strong, under command of C. H. Miller, whom they elected captain, throwing up fortifications with a view to establishing a depot. * * * Harney Valley is a very broad valley, apparently almost round, and about fifty miles wide, by sixty in length; its greatest length extending northeast and southwest. In the southeastern portion the lake is situated, and when at its fullest, from the melting snow on the mountains surrounding it, it possibly covers one-third of the entire surface of the basin." Lieut. Waymire led his company southward to the (R. 335) neighborhood of Steen's Mountain, where he met the Indians in such force as to lead him to turn back to Camp Lincoln. His expedition lasted for twenty-four days during the first thirteen days of which there was a snow storm every twenty-four hours. (Report of the Adjutant General of the State of Oregon, for the years 1865–6, printed Salem, Oregon, 1866, p. 67, from a Report of Lieut. Waymire.

In April of the same year, 1864, Captain George Currey was sent out from Fort Walla with a company of men on an expedition against the Indians of the Owyhee River region and the country west of that stream. He entered Harney Valley in June, 1864, by way of the Owyhee River, Alvord Valley, and across Steen's Mountain. With his company he arrived at the "southeast margin of Lake Malheur on the evening of June 24." Here he had no water but that from the lake, which is brackish and filled with the excrement of wild geese and other water fowls. The banks are low, covered with greasewood, with a very scanty supply of alkali grass. The water in this lake is shallow, the bottom composed of made deposit of vegetable matter and alkali. (R. 336.) Passing around this lake on the south side, we met with some difficulty in crossing a deep,

sluggish creek that comes from the south. In order to find a ford, we traveled up this stream for nearly half a day before we succeeded in finding a place where our pack animals could cross it. A large brush heap was made and on this we went over. This being done, we soon encountered a tributary from the east. As this was (R. 336) small and with very muddy banks, after several abortive efforts to cross it, another large brush heap was made by cutting willows with our cavalry sabres and throwing them across the channel; over this brush a quantity of grass was thrown and a bridge was completed over which the command passed in safety. At the moment we reached the banks of this stream, the first time, a loud clap of thunder sounded over our heads from which incident we named the stream "Thunder River." The smaller stream for the sake of euphony, we called "Blitzen River." Picking our way as best we could, and keeping our course as near as we might, the command reached the east end of Harney Lake on the afternoon of the 27th of June, during a very unpleasant rain storm. Owing to a deep quicksand-bottomed channel that connects the waters of Harney Lake with that of Stampede Lake on its east, which in the early part of the summer is probably nothing but an arm of Malheur Lake, we were unable to pass between the two bodies of water. This forced us to make the circuit of Harney Lake, which we did by the evening of the 28th. Harney Lake is a much more respectable looking body of water than Malheur Lake. The banks are higher, water cleaner, bottom more inclined to be firm, and the water much deeper; yet the water is more decidedly of an alkali nature; yet such as it is, we were compelled to make out with it for man and horse. Harney Lake is in an ovate shape, with sterile banks, except on the northwest, where Silver Creek enters. Here is some grass land and rich soil." (Report of Captain George (R. 337) Currey in Report of the Adjutant General cited above, pp. 40–41.)

Captain Currey was the first visitor after Ogden to distinguish two lakes and so far as I have been able to discover is the first writer to call one of these lakes "Malheur Lake." He also gave the names "Donner and Blitzen" that have been accepted instead of the name New River given by Dixon. "A map of eastern Oregon and western Idaho compiled by 2nd Lieut. J. Bowen," described as but a "rough sketch from notes of the marches and expeditions in the summer of 1864" (Mss. in Oregon Hist. Society Library) shows Harney Lake and Malheur Lake as two connecting bodies of water. The "Eugene City Road" is shown as running east and west to the north of the lakes and the "Red-Bluff-Goose Lake Road" branching off from the Eugene Road and running southwest around Lake Harney.

During 1865 and 1866 companies of the Oregon Volunteers were stationed at two posts in the Harney Lake region. One of these posts, Camp Wright, was situated on Silvies River about twenty miles from Lake Harney, the other, Camp Currey, at Indian Springs on the head waters of Silver Creek about thirty miles north of the lake. Both these posts were erected in the summer of 1865 and troops

were stationed here during the winter of 1865–66. During 1866 the military posts in Oregon were taken over by the regular United States Army and the commander of the Columbia Department, Major General F. Steele, made a tour of inspection of the posts that brought him to Camp Currey on the (R. 338) 16th of June, 1866. Two days later he was unable to cross Silvies River near its mouth on account of high water and was obliged "to follow its course through almost impassable canyons to its source. On the 20th the river was bridged and the command crossed." Steele remarks that on his trip from Fort Dalles, starting on (R. 339) June 5, and ending at the Snake River twenty-seven days later, that "we were frequently compelled, on account of the high waters, to head impassable canyons, and considerable time was lost in attempts to cross the rivers at different points." (Reports of Major General Steele, dated Fort Vancouver October, 1866, in Report of the Sect'y of War, 1866–67, House Doc., Serial No. 1285, pp. 37–42.) The Army posts in the Harney Lake region were abandoned in 1866.

Camp Harney was established by Major General George Crook in 1867 and formally set aside as a military post and reservation by the President of the United States in 1872. The Malheur Indian Reservation north and east of Fort Harney, was created by President Grant in 1871. Fort Harney was abandoned as a military post on June 14, 1880. The reports of the Army officers stationed at Fort Harney from 1867 to 1880 deal mainly with Indian conflicts and treaties with Indians and give little or no description of the country or weather conditions. One of these reports, that of Inspector General R. B. Marcey, in 1872, remarks that, "the country is rather remarkable as regard to small degree of humidity, there having been thirty-two days of rain and sixteen of snow during the last year, the combined (R. 339) fall (of rain and snow melted) being seven and one-half inches."

During 1870–71 the Willamette Valley and Cascade Mountains Military Wagon Road was opened up through Harney Valley and eastward to the State line. One of the builders of this road testified in June, 1881, that before the building of this road there was not a settler along the line of the road from the Cascade Mountains to the eastern boundary of the State, "except at Fort Harney." He goes on to state that within two years after the opening of the road 250 families entered the country served by this road. (House Reports, Serial No. 2674, Doc. No. 4056, p. 23, testimony of Jason Wheeler.) (R. 340.) The settlement of Harney Valley began during the early years of the eighteen seventies. I will end this narrative of the early history of Harney Valley with the beginning or the settlement.

By way of conclusion and summary it may be noted that this brief survey of the history of the Harney-Malheur Lakes region has covered the period from its first discovery and exploration in 1825 to the beginning of white settlement in 1872, and that it has been based entirely upon available written evidence, source material, closely contemporary to the events described. From this evidence

it is possible to determine how the mountains, lakes, and streams of the region received their names and it may be concluded that Harney Lake always impressed visitors as a large body of water, one of the remarkable natural features of the country. Until about 1864 Malheur Lake did not stand out as a distinct body of water deserving a name to distinguish it (R. 340) from Lake Harney. The region east of Lake Harney certainly impressed the Army officers who observed it during the years 1859 and 1860 as one of sloughs, marshes, tule lakes, rather than a distinct lake. It would seem that after 1860 there was a succession of years of heavy precipitation that raised the level of the lakes and gave to Malheur Lake the character of a lake separate and distinct from Lake Harney. Certainly the descriptions of the lakes from 1864 to 1872 and the maps drawn during those years indicate the existence of two lakes. In none of the accounts for the years covered do we find an estimate as to the depth of either of the lakes.

That is all of my report. (R. 341.)

Cross-examination:

It is my opinion that Peter Skene Ogden was travelling generally from the northeast; that is, coming by way of the Malheur River until he struck the headwaters of that River, and then came down that way. He arrived in the vicinity October 19, 1826. I have read in his journal exactly the way the original record reads.

The printed copy of Ogden's original journal uses the word "salt." That is all I can say.

Ogden's journal shows that there was a sand reef in 1826, separating a salt lake from a fresh water lake. Looking at the maps introduced in evidence, I think it is quite possible that in 1826 Mud Lake was a lake about a mile wide, and nine miles long, east of the Sand Reef. (R. 360–361.) I think that when Ogden stated in his journal "In this (salt) lake discharge Sylvaille's River and two small streams; but it has no discharge," he did not mean Silver Creek, because I do not believe he had seen Silver Creek when he made that note.

Mr. LILJEQVIST. Q. You state that a river, which he calls "Sylvaille River" discharges into salt lake, apparently, doesn't he?

A. Yes; he says that, but I believe he means that first lake. That would seem to be obviously an error.

Q. Well, this river which he calls "Sylvaille River," discharging into the salt lake, in which case it could not be the present Silvies River, or else what he was talking about was that a river called Silvies River discharged into the fresh water lake; isn't that correct? (R. 361.)

A. Yes; it seems to me it is confusing. It is hard to make out what he does mean.

Q. Now, after being at this place, apparently where he found there was a sand reef, he then travels west around the salt lake, and he finds it about five miles wide and about ten miles in length. That

is a fairly accurate description of Harney Lake according to the maps, isn't it?

A. Yes.

(NOTE.—Upon agreement of respective counsel, plaintiff is to supply a photostatic copy of Dr. R. C. Clark's rough hand sketch of a map drawn by Peter Skene Ogden during his expedition of 1826–1827, and which was part of his diary, and it is to be marked "Plaintiff's Exhibit No. 34.") (R. 362–363.) This has been supplied.)

This map of Peter Skene Ogden apparently shows a river called the "Sylvaille's river" flowing directly into a lake called "Sylvaille's lake." Ogden says, "Two streams flow into the river," so that when he uses the words "two small rivers" in this excerpt in his diary, it may be that the two small streams which flow into the river, he means "flow into the lake." His map shows only one lake, although his description shows a salt water lake, with a somewhat brackish taste, and a sand ridge east of it. (R. 363.)

On June 8, 1827, Ogden returned by way of Klamath Lake, and he camped at the end of the "salt lake" which he had seen the previous fall.

Mr. LILJEQVIST. Q. And there he states the water "is very high. The waters of Sylvailles's River and Lake discharge into it. The stench of the lake is terrible." (R. 364.) It is from that language you merely infer that the lakes in the following spring were joined, and water flowed from the fresh water lake into Harney Lake?

A. Yes.

Q. It is that language that you interpret, and that is the basis of your interpretation that you have given just now?

A. Yes, it is.

(NOTE.—Dr. Clark is to furnish certain data relative to the starting point of a journey made by John Work when he arrived after a nineteen mile trip at Sylvaille's Lake, July 2, 1831. R. 364–365. This has been supplied by Doctor Clark. See Vol. II, pp. 1040–1045, of this Abstract.)

I have no memorandum to tell at what part of the lake (Sylvaille's Lake) John Work arrived at July 2, 1831. I have read into the record the exact quotation from his journal as given there.

The following day (July 3, 1831) John Work states, "Our road lay along the lake"; he traveled westerly along the south side of Harney Lake, and then northerly.

Q. He traveled, in a circuitous route, west and northwest 20 miles, and he said he went across a point to Sylvaille's river. Now, do you know, as a matter of fact, that if he did arrive at Lake Harney and traveled westerly along the south side of Harney Lake, and then northerly and proceeded toward what is now Silvies River, it would have been a great deal longer distance than 20 miles, and, therefore, it is possible again that in that very early record Silver Creek, which flowed into Harney Lake, may have been what was then designated as "Sylvaille's River" (R. 365), and subsequent map

writers and other people making expeditions may have transferred that name to the Silvies River, as it subsequently became?

A. I do not believe that myself. That wouldn't be my interpretation of it.

Q. It is a great deal longer than 20 miles around the westerly side of Lake Harney, and the shortest possible distance to Silvies River.

A. It would depend upon what point he hit Harney Lake. (R. 366.)

It would be a pure matter of geography and distances. It might be said, however, he may not have been able to estimate his travel accurately going by horseback. He said he took a circuitous road.

Mr. LILJEQVIST. Q. And after he hit Harney Lake he traveled along the southern boundary, and along the western boundary of it, and then somewhere after traveling 20 miles he arrived at Sylvaille's River. And he doesn't say that he traveled easterly at all, does he?

A. No, he doesn't say that. He said west, north and west.

Mr. BLACKMAR. I have located a copy of the Arrowsmith map and I hope to have it here in two or three days. (R. 366.) I will have it photostated. (R. 367.)

Most of the accompanying things in his (John Work's) journal were incidents of hunting, and things that did not have anything to do with map making, and the descriptions therein are (R. 366) apparently incidental to his main activities.

I have never seen the map of Arrowsmith of London.

In my report, I next refer to a book of Travers Twiss, "The Oregon Question," published in London in 1846, which contains a map showing the river flowing into a chain of three lakes, just named "Sylvaille's." We do not have that map here. The only name given on that map is to the lake called "Sylvaille's." The history does not describe a river flowing into a chain of three lakes, that is my own description. I was just looking at (R. 367) the maps. If there were three lakes in 1846, they might correspond to Harney, Mud, and Malheur Lakes. There were three lakes on the map, that is all I can say.

In my report, I next refer to a book named "Mitchell's New Map of Texas, Oregon, and California, published in Philadelphia, 1846." That map is not here. The other lakes are not named on it. But, there are three lakes on that map.

The map of John C. Fremont is not exhibited here but there is a copy of it in one of the volumes. It shows the Malheur River flowing out of three lakes. (R. 368–369.) All of the lakes on that map are unnamed. My investigation has shown that some of the early map makers seem to give the origin of the Malheur River out of three lakes. I do not believe that Arrowsmith did, because he had information directly from the Hudson Bay Company.

John C. Fremont had three lakes, in 1843, but he drew his map (R. 369) in 1849.

In my report, I next refer to a record which shows that in April, 1859, General William S. Harney, United States Army, in command of the Department of Oregon, sent Captain Henry D. Wallen to explore a wagon road from The Dalles, Oregon, to Salt Lake City by way of the John Day River, and on the 7th day of July, 1859, he came into Harney Valley in the vicinity of the lakes.

Mr. LILJEQVIST. Q. And from the testimony, as you have it here, it was during the period of normal high water, after the ordinary freshets would have been in the lake?

A. Yes. (R. 369-370.)

Q. And in that description, then, in July, 1859, he mentions coming to Harney Lake, a large salt lake, which they followed, and then they crossed over a sand ridge, and about one mile distant they came upon a small lake of fresh water, not very good, but still drinkable, which they named Lake Stampede; and from the maps it is apparent that Lake Stampede was Mud Lake, isn't it?

A. It might be; yes.

Q. I mean that would be a fair interpretation of those maps?

A. Yes, it was.

Q. So that in July, 1859, the historical records that you have studied indicate that traveling along Harney Lake, the great salt lake, they came to a sand ridge and beyond the sand ridge about a mile away they saw Stampede Lake?

A. Yes.

Q. With its fresh water, or comparatively fresh?

A. Yes.

Mr. BLACKMAR. Is it called Stampede Slough on some of those maps?

A. Yes. (R. 370.)

Mr. LILJEQVIST. Q. Doctor Clark, as I understood your interpretation of some of these records, it was to the effect that there were not two lakes, according to the early maps or reports of expeditions. Now, as a matter of fact, it is apparent, is it not, from (Plaintiff's) Exhibit 27, which has been introduced in evidence as having been published in 1856, that "L," which is "Lake," and "Sylv."—it looks like "Sylvaille's" is a separate lake—and immediately to the right of it are two lakes, around one of which is marked "Malheur L."

A. I hadn't seen that map when I made my report.

Instead of saying that it was unnamed, I would have said it was named.

Q. As a matter of fact, a map made in 1856 does show Lake Sylvaille and Malheur Lake as separate lakes, and they were named at that time, apparently?

A. Yes, sir.

Q. And a big stream flowing into Malheur Lake?

A. Yes.

Q. There is nothing in the record to absolutely establish the fact, is there, that Lieutenant Dixon saw what he called Cricket River, and which he talks about having crossed a mile above its mouth,

outside of that particular statement that is there? In other words, that is the only statement there is, isn't it? (R. 372.)

A. Yes.

Q. And there is nothing in that statement to indicate whether or not on August 4, 1860, the Sand Reef still existed and separated Stampede Lake from Harney Lake, other than this statement that he has made here?

A. He states very definitely that the Stampede Slough and the Cricket River connected with Harney Lake, and shows it on his maps.

Q. Yes, I notice the map which has been introduced in evidence as (Plaintiff's) Exhibit No. 25; but it is perfectly apparent it is not correct, for the reason that it does show the open water of Malheur Lake, with two big rivers flowing into it from the south; isn't that correct?

A. Well, I wouldn't interpret it exactly that way, as to whether he means it as a lake or not, or a very large lake. He may mean just a slough. He doesn't name it.

Q. He has the name "Harney Lake," and then he has "Stampede Slough," and he has a line drawn from Stampede Slough into Harney Lake.

A. Yes.

Q. And that is one reason that you interpret that Stampede Slough flowed into Harney Lake?

A. And also because he said it did, too, in his report.

Q. Just read from your record what he says on that matter.

A. He says, "Stampede Lake is described as 'merely (R. 373) a slough' at low water, making out from Cricket River, which flows into Lake Harney near-by."

Q. This description is also accompanied by his map made by him?

A. Yes.

Q. In which he shows New River flowing into a body of water.

A. Unnamed.

Q. Unnamed. And immediately to the right of New River there is another river not quite as long, but within a few miles easterly of it, which is also flowing into this unnamed lake.

A. Since that second one is so much shorter it might not be quite a river; it might be meant for a creek.

Q. It is unnamed, isn't it?

A. Yes.

Q. And it is many miles in length, isn't it?

A. Well, we could guess at that.

Q. Do you know of any creek, as a matter of geography, that has ever flowed, or any river corresponding to this map of Dixon's, that has ever flowed into the Malheur Lake?

A. That might lead you to believe that he does not mean that for a lake.

Q. It would also indicate that he was very, very inaccurate in his map making, wouldn't it?

A. Yes; I think so. (R. 373.)

Q. Then we have, as I read the historical evidence, in 1859 one explorer describing in an official document that Harney Lake is separated from a body of water by a sand reef, and describes it in the fall.

A. June or July.

Q. It is clearly described as Harney Lake separated by a sand reef from a fresh water lake above it, that is correct, isn't it?

A. Yes.

Q. And in July, the 7th, 1859, within a few months after Oregon was admitted to the Union, another historical document also shows that the sand reef still separates Harney Lake from Stampede Lake?

A. I do not believe that, because he said that the sand ridge that he saw only skirted the lake.

Q. You are giving your interpretation of it, aren't you?

A. Yes.

Q. But the document, as you have read it, speaks for itself?

A. It simply said he crossed a sand ridge.

Q. And followed a fresh body of water beyond it?

A. Yes.

Q. There is nothing in that document that directly or indirectly, within its own language, shows that this fresh body of water on July 7, 1859, was flowing into Harney Lake, isn't that correct, according to that particular report? (R. 374.)

A. There is a map that goes with that report that (R. 375) ought to be used in connection with 1859; but I think it is almost immaterial, since we have a map of 1860.

Q. I am talking about two different men writing about the same thing, historical writings, and they contradict one another as to exactly what they saw, don't they?

A. I wouldn't say they contradict each other.

Mr. BLACKMAR. Excuse me. Do I understand you are referring to Ogden and then to Dixon?

Mr. LILJEQVIST. Well, you just read it into the record here.

A. He is talking about Wallen and Dixon, I think. It is Wallen that speaks of crossing the sand ridge to Stampede Lake. Dixon doesn't say anything about sand ridge.

Mr. LILJEQVIST. Q. Yes; it is Captain Wallen, on the 17th of July, 1859, he talks about striking this great salt lake and he says:

"We followed this lake, in which graceful sea gulls and grotesque looking pelicans were disporting, for 10 or 12 miles, with much fear that our animals would suffer for fresh water, when to our agreeable surprise, in crossing over a sand ridge, and only one mile distant we came upon a small lake of fresh water, not very good, but still drinkable; we named this Lake Stampede, as here we had some trouble with our horses."

A. That is correct.

Q. Now, did you say there was a map accompanying (R. 375) Wallen's report?

A. Yes, there is a map of 1859, but we do not have that here. (R. 376.)

(NOTE.—A copy of the Wallen map of 1859 has been obtained and is designated as Plaintiff's Exhibit No. 35.) (R. 376.)

The Wallen map can be found in Senate Document, 36th Congress, Serial No. 1031, Doc. No. 34. You have the full Wallen report there and the report of the topographical officer, Dixon, and his map.

I have described the report of Captain George Currey where, in 1864, he struck the southeastern corner of Malheur Lake. (R. 377.) I have read that description into the record. He then proceeded southerly to a sluggish stream which was undoubtedly the Blitzen River. Then he traveled one-half day south until he came to a place where he could ford it. He then crossed the River and again struck another stream or tributary from the east. I do not know whether the tributary he crossed from the east is now called the Blitzen. Then he went to Harney Lake and at Harney Lake he found a quicksand bottom connecting the waters of Harney Lake with Stampede Lake.

Mr. LILJEQVIST. Q. And there was apparently so much water in Harney Lake that he couldn't cross there, and he had to go around it; he couldn't cross the channel on account of quicksand?

A. Yes.

Q. And some witnesses have testified they could go down to the hard bottom in Harney Lake. He apparently couldn't do it on that day; and he continued that journey in 1864, and he tells about the great quantities of water he found in the country, didn't he?

A. Yes. (R. 378.)

3. Exhibits in connection with Dr. Clark's testimony

Dr. R. C. CLARK, called as a witness for the plaintiff, testified in substance as follows:

Mr. BLACKMAR. I will say to your honor, that I have here the original Senate documents, and also the Report of the Adjutant General of the State of Oregon, which I will be very glad to leave with your honor, so that your honor can look at them. They are very valuable books, and they belong in the public library, and they can not be removed permanently as exhibits. They were loaned to us with the understanding that we would return them.

This book here is the Report of the Adjutant of the State of Oregon for the year 1865–1866, published (R. 341) at Salem, Oregon, in 1866, by Henry L. Pittock, State Printer, and bears the imprint of the seal of the State of Oregon. The particular document referred to by Dr. Clark commences on page 11, and is entitled, "Report of Captain George B. Currey, of Company E."

Plaintiff's Exhibit No. 23, by agreement of respective counsel, is copied into the record and reads as follows:

"Here at the eastern base of Steen's Mountain, the place was selected for a summer supply depot. Being satisfied that (R. 342)

a large body of Indians had been within a short time camped in this valley, in order to render a few men able to defend the camp, earthworks in the form of a 'star-fort' were thrown up and the stores placed in this enclosure, and the men designated (R. 343) for its defence camped inside the inclosure. Through the middle of this fort ran a small stream of water that came directly from the snow bank up the mountain side. Thus having rendered this point as easily defended as possible, and leaving the camp in command of Capt. Barry, 1st W. T. Infantry, with the Infantry detachment and the disabled Cavalry horses and their riders, on the 22nd day of June (1864), with the greater portion of the Cavalry, I started for the Harney Lake, where I had been ordered by the District Commander, to form a junction with Capt. John M. Drake, who was in command of an expedition that started from Fort Dalles. Passing along the eastern base of Steen's Mountain that raises almost perpendicularly from the turf-covered valley to the region of perpetual snow, in a north course. We had an old, well worn Indian trail the most of the way, with grass and an abundance of clear, cold water that came sparkling from the mountain snow above and lose themselves in small lakes or ponds farther out in the valley. On the 23d, we turned up a ravine to the left and crossed over Steen's Mountain. The pass at this place is not difficult, as the mountain gradually declines from the apex opposite Camp Alvord to the North; and here, at a distance of thirty miles from that point, was clear snow. Scouts from the camp on the evening of the 23d (R. 343) reported a large lake some distance to the northwest. This was very correctly concluded to be Malheur River Lake. Turning our course directly toward this body of water, we reached the southeast margin of Lake Malheur on the evening of the 24th. Here we had no water but that from the lake, which is brackish (R. 344) and filled with the excrement of wild geese and other water fowls. The banks are low, covered with grease-wood, with a very scanty supply of alkali grass. The water in this lake is shallow, the bottom composed of made deposit of vegetable matter and alkali. Passing around this lake on the south side, we met with some difficulty in crossing a deep, sluggish creek that comes from the south. In order to find a ford, we traveled up this stream for nearly half a day before we succeeded in finding a place where our pack animals could cross it. A large brush heap was made and on this we went over. This being done we soon encountered a tributary from the east. As this was small and with very muddy banks, after several abortive efforts to cross it, another large brush heap was made by cutting willows with our cavalry sabres and throwing them across the channel; over this brush a quantity of grass was thrown and a bridge was completed over which the command passed in safety. At the moment we reached the banks of this stream, the first time, a loud clap of thunder sounded over our heads, from which incident we named 'Thunder River.' The smaller stream, for the sake of euphony, we called 'Blitzen River.' Picking our way as best we could, and

keeping our course as near as we (R. 344) might, the command reached the east end of Harney Lake on the afternoon of the 27th of June, during a very unpleasant rain storm. Owing to a deep quicksand-bottomed channel that connects the waters of Harney Lake with that of Stampede Lake on its east, which in the early part of the summer is probably nothing but an arm of Malheur Lake, we were unable to pass between (R. 345) the two bodies of water. This forced us to make the circuit of Harney Lake, which we did by the evening of the 28th. Harney Lake is a much more respectable looking body of water than Malheur Lake. The banks are higher, water cleaner, bottom more inclined to be firm, and the water much deeper; yet the water is more decidedly of an alkali nature; yet such as it is, we were compelled to make out with it for men and horse. Harney Lake is in an ovate shape, with sterile banks, except on the north-west, where Silver Creek enters. Here is some grass land and rich soil. On reaching the north-east end of Harney Lake, I was somewhat disconcerted in not finding Capt. Drake, as I knew he had received his orders several days earlier than I did mine, to repair to that place, and that he was much nearer to the place of rendezvous than myself. Not knowing whether he had been met and forced back by the Indians or whether the plan of conjunction had been reconsidered, I was left in a condition in which there was nothing left me to do but conjecture. Taking a view of the surrounding country, and selecting the most probable place to find Indians, I started up Selvie's River, a tributary of 'Stampede Lake.' Moving up this stream one day's march, we (R. 345) encamped. About 12 o'clock at night an express from Capt. Drake, reached my camp informing me of the whereabouts of Capt. Drake. This was Muster Day, June 30. On the morning of July 1, we crossed Selvie's River on a bridge constructed out of willows cut with our sabres, and passed over a sage and grease-wood plain in a north-east direction, formed a junction with Capt. Drake at 'Rattlesnake Camp,' on a small creek that rises in the mountain rim that encircles the Harney and Malheur Lake Valley."

That begins just before page 528. (R. 346.)

Plaintiff's Exhibit No. 24 is Executive Document for the Second Session, 37th Congress, 1861–1862, Volume 2, commencing at page 528, and is entitled Appendix IX and the following is a copy thereof:

APPENDIX IX

Topographical memoir of the command against the Snake Indians, under Major E. Steen, United States dragoons, in the summer of 1860, by Brevet Second Lieutenant Joseph Dixon, United States (R. 346) topographical engineers.

FORT VANCOUVER, W. T.,
December 11, 1860.

CAPTAIN: I have the honor to submit the following preliminary topographical memoir of the operations of explorations and surveys

under my charge with Major Steen's command, in accordance with the following orders and instructions:

SPECIAL ORDERS No. 37. | HEADQUARTERS DEPARTMENT OF OREGON, FORT VANCOUVER, W. T., *March 28, 1860.*

(EXTRACT)

I. To extend the explorations of the past season, as well as to afford adequate protection to the emigration from the western States within the limits of this department, the following-named commands will be organized for the respective duties prescribed in this order, viz:

III. Company H, first dragoons, and a detachment of a commissioned officer and twenty men from company G, 9th Infantry, under the command of Major Enoch Steen, 1st Dragoons, will leave Fort Dalles on the 10th of June next for the purpose of opening a wagon road from Harney Lake, as placed on the map, to Eugene City, Oregon. (R. 347.)

* * * * * * *

V. Brevet, 2d Lieut. Joseph Dixon, corps of topographical engineers, will report for duty with Major Steen's command.

VI. The quartermaster's, subsistence, ordnance, and medical departments, will furnish the necessary transportation, guides, supplies, etc., for both of these commands, each command taking five six-mule teams, and wagons and the remainder in pack mules. (R. 347.)

* * * * * * *

By order of General Harney.

A. PLEASONTON,
Capt. 2d Dragoons, Act. Asst. Adj. General,

OFFICE OF MILITARY ROADS, *May 3, 1860.*

SIR: Having been assigned to duty with the command organized under Special Orders No. 37 (of 1860), headquarters department of Oregon, for the purpose of opening a wagon road from Harney lake to Eugene City, Oregon, in extension of the explorations made by you last season, you will render to me, when practicable, monthly reports of your progress, and transmit through me to the Bureau of Topographical Engineers the usual monthly statements, quarterly returns and accounts, also a copy of your final reports and map of the explorations required by the army regulations.

I am, sir, very respectfully, your obedient servant,

GEORGE TROM,
Capt. U. S. Topographical Engineers.

BREVET 2D LIEUT. JOSEPH DIXON,
Corps of Topographical Engineers, Fort Vancouver, W. T.

In accordance with the foregoing orders and instructions, I repaired to Fort Dalles, Oregon, and reported to Major Steen for duty

on the 19th of May, 1860. After receipting to the acting assistant quartermaster at Fort Dalles for the necessary animals, spring wagons, tents, etc., to complete my outfit, we (R. 348) took our departure from Fort Dalles on the morning of the 24th of May, 1860.

In order the more fully to describe the country traversed, I have divided my report into sections, each one setting forth the general topographical features of the country along the routes travelled on our different marches and scouts, as illustrated by the accompanying map.

* * * * * * *

FOURTH SECTION

This section includes the country examined whilst attached to the command organized in accordance with the following orders:

HEADQUARTERS EXPEDITION AGAINST SNAKE INDIANS,
CAMP UNION, *August 2, 1860.*

(Orders No. 7.)

The orders of the colonel commanding the department for the prosecuting of war against the Snake Indians having been received, the following disposition of the troops now assembled at this camp is made, viz:

1. A command composed of one hundred dragoons of companies "C" and "H," and companies "A" and "B" of 3d Artillery, will leave this camp on the 4th instant, and march in the direction of the Snow Mountains, south of Lake Harney. (R. 349.)

* * * * * * * *

VI. Assistant Surgeon Taylor, and Brevet Second Lieutenant Joseph Dixon, United States topographical engineers, will (R. 349) accompany the command for the Snow Mountains, in the performance of the appropriate duties of their respective corps.

VII. The friendly Indians from the Warm Spring Reservation, having voluntarily joined the command with the view of recovering such of their property as is in the hands of the Snake Indians, are placed under charge of Brevet Second Lieutenant Joseph Dixon, United States topographical engineers, to whom instructions for their government will be hereafter imparted.

By order of Major E. Steen.

D. McM. GREGG,
Adjutant of Command.

Agreeable to the above orders, the command organized to march in the direction of the Snow Mountains, south of Lake Harney, left Camp Union on the morning of the 4th of August; and at the same time the wagon train under the command of Major Andrés, 3d Artillery, was directed to march on Captain Smith's road to some point on the northeast side of the Big Meadows, and there await our return from the Snow Mountains.

Our course as far as Stampede Lake was over the same road that we travelled in June on our outward march from Camp No. 19, near the north end of Lake Harney, toward Eugene City.

Stampede Lake at low water is merely a slough making out from Cricket River, which flows into Lake Harney near by.

The lands slope uniformly with gentle grades from the base of the surrounding mountains and table-lands down to Cricket River, which flows nearly through the center of the valley of the lakes. Artemisia covers the country everywhere, although grass (R. 350) is to be found tolerably plenty along the banks of Indian creek and Cricket river.

It will be perceived by examining the accompanying map that the route travelled by the command on this scout is indicated by a blue line, and that it diverges from all other routes at Stampede Slough, and follows a southeast course, crossing Cricket River about one mile above its mouth. Cricket River, at the point where we crossed it, was about three feet deep and from forty to fifty feet wide. It flows with a sluggish current between low and marshy banks, destitute of timber of any kind. Its water has a disagreeable alkaline taste. Different varieties of water-fowls were found in great abundance along the shores of Lake Harney and the banks of Cricket River, but no evidence of large game was seen. From Cricket River we travelled over a low, sandy ridge that extends down from the high table-lands south of Lake Harney into the valley of New River.

New River flows nearly due north, through a valley from four to six miles wide. The exact nature of the current, as well as the width and depth of this stream, we could not well determine, as its banks were bordered by low, marshy meadows and extensive tulare lakes.

The soil of this valley is saline, and though it doubtless affects the grass somewhat, it does not affect the waters of the different streams flowing through it, which were cold and palatable to the taste. Artemisia and greasewood, with a few (R. 351) saline plants, were the only vegetation to be found outside of the meadows along the banks. In passing up New River, we had to travel at some distance from the stream, on account of the swampy character of its banks. (R. 352.)

As we approached the northern base of the Snow Mountains, the valley of New River gradually became narrower and narrower, until finally it changed into a formidable canyon, the sides of which rise nearly perpendicular from the water's edge, and are so extremely rocky and rugged that there is scarcely to be found a point of ingress or outlet even for a man on foot.

The country extending back from the western bank of New River to the extreme limit of vision presents immense plateaus, rising one above the other in successive stages, until the surface of the most elevated reaches from five to six thousand feet above the level of the sea. The rocks displayed along the edges of the different plateaus were chiefly of a coarse basaltic conglomerate, crumbling and decayed on the exposed surface. The surfaces of these plateaus

were covered chiefly with sage and greasewood, interspersed here and there with fields of volcanic rocks, where no vegetation of any kind made its appearance.

There extends along the eastern bank of New River a high and rugged mountain, the summit of which reaches nearly to the region of perpetual snow. This mountain appears to be isolated from all other mountain ranges in this country. To the north it gradually loses itself in the high table-lands that border the (R. 352) valley of the lakes on the east, and in a southern direction it soon breaks up into smaller ranges, which gradually decrease in magnitude until they are lost in the general level of the surrounding country. As we were undoubtedly the first party of white men that ever crossed this mountain, I named it in honor of our energetic commander, Major E. Steen, United States Army. The western slope of Steen's Mountain is very rocky, and is intersected by numerous (R. 353) lateral ravines, which extend from New River quite to the summit of the mountain. The banks of these ravines are very rocky and steep, rendering travelling along the western slope of the mountains entirely impracticable. The summit of this mountain is about 9,640 feet above the level of the sea, and was on the 11th of August covered with fields of snow. It is nearly destitute of vegetation, and the prevailing rocks are a coarse basaltic conglomerate, rent and broken in every direction by heat.

From the summit of Steen's Mountain to the eastern base there extend accumulated masses of broken rock, with here and there dark ledges of basaltic conglomerate, which rise perpendicularly along the eastern crest, rendering the descent or ascent of the eastern slope of this mountain nearly impossible. We crossed New River a few hundred yards below the point where it debouches into the valley, and ascended Steen's Mountain by a lateral spur extending down from the main mountain, between two of the eastern tributaries of New River.

We passed directly over the crest of the mountains into the (R. 353) valley lying along its eastern base. The descent of the eastern slope was very fatiguing and dangerous. In other words, it was the worst path I ever have seen animals travel over.

The view from the eastern base of Steen's Mountain was desolate, and disheartening in the extreme. Not a tree was to be seen in any part of the horizon.

The plain lying between us and the distant mountains, near the source of the Owhyhee River, was, for many square miles of surface, covered by a white saline frosting, which existed so abundantly that vegetation of any kind would not grow. (R. 354.) Indeed, the desolation which pervades all nature in this region is to such an extent that it can never be appreciated by anyone until realized. To the south and west were a low range of broken mountains, presenting bare masses of sandstones; and even on the higher mountains still farther to the south not a tree was to be seen. To the

north and east mass after mass of volcanic rocks broken into fragments covered the whole face of the country.

From the eastern base of Steen's Mountain we travelled southeast across a desert of stiff mud as level as a sheet of water, which we found great difficulty in crossing with our pack animals. As we approached the low moutains, near the headwaters of the Owhyhee River, we came to a more firm and dry soil, covered with a thin sprinkling of artemisia, and near the foot of these moutains we found a large spring of fresh water, surrounded by large meadows of excellent grass and clover. (R. 354.)

This spring is truly an oasis in the middle of a large desert. The general appearance of the soil of this desert is of a light sandy character, covered with small sage bushes, with here and there districts smooth and denuded, very much resembling, when seen from a distance, shallow lakes. The desert is studded with isolated ridges and hills, covered with masses of broken rocks of igneous and scoriaceous character. From the above-mentioned oasis we travelled nearly due north over this desolate and miserable region to a low, broken ridge, where we fortunately found a small spring in a ravine, pretty well up towards the summit of the ridge. This spring was small, but digging a series of wells it answered the purposes of our (R. 355) command. Beyond this spring, towards the north and east, the country presents a vast table-land, from the western borders of which Steen's Mountain gradually rises and extends off in a southern direction.

This vast extent of table-lands spreads out towards the headwaters of Malheur River, where it begins to mingle with the spurs of the Blue Mountains, and the desert character of the country gives place to a mountainous region covered with timber.

This table-land is cut and rent into deep yawning canons, which are so closely interlaced in many places that they have nearly changed the original appearance of the country, only leaving isolated ridges and frustum-shaped hills as the only remains to indicate the original character of this plateau. From the above mentioned spring our general direction was nearly (R. 355) northwest, intersecting Captain Smith's road a few miles from the point where he was attacked by the Indians, and following it to the northeast side of the Big Meadows, where we met Major Andrews' command on the 16th of August, 1860.

In conclusion, I would state that our command traveled on this scout 250 miles over a country utterly worthless. Even the Indians that inhabit it are among the lowest of the human race in intelligence and humanity. Their language is a corruption and intermingling of a few words from each of the surrounding tribes; from which, in part, they come themselves, as it is said they are the exiled convicts from all the Indian tribes around them. They live a family or two in a place, and their chief and constant occupation seems to be stealing and plundering from all small parties that may chance to pass through their country. (R. 356.)

Finally, I would remark that on the best authenticated maps in our possession the Malheur River is indicated as rising in about longitude 119° and latitude 44° 10′, and in its southern course draining a large lake. I was well satisfied in my exploration of last year, from the formation of the country, that this was not the case. This year I have passed over all this country, and find that the Malheur River rises east of the main chain of the Blue Mountains, and flows a considerable distance east of its position indicated on the old maps, and that it does not drain any lakes whatever.

The waters rising west and north of the surrounding mountains all flow into Lake Harney, which has no visible outlet. (R. 356.)

Mr. BLACKMAR. In connection with Plaintiff's Exhibit No. 24, I desire to introduce Plaintiff's Exhibit No. 25, entitled "Map showing the routes traveled by the Command of Major E. Steen, U. S. Dragoons." We will supply a phostatic copy of the original map.

(NOTE.—The following exhibits were then received in evidence:)

Plaintiff's Exhibit No. 26, map entitled, "Map of Oregon Territory by U. S. Ex., Charles Wilkes, Commander, 1841." (R. 357.)

Plaintiff's Exhibit No. 27, map entitled "Western States including California, Oregon, Utah, New Mexico, Indian Territory, etc."

Mr. BLACKMAR. There is no identification on that. I understand that this is an English map, known as a Black map, published in 1856.

Mr. LILJEQVIST. Anyway, the date of it is claimed by the (R 358) plaintiff in this case as 1856?

Mr. BLACKMAR. That is what I understand. It is from the Library of Congress. (R. 357–358.)

Plaintiff's Exhibit No. 28, map entitled "A Diagram of Oregon, W. W. Chapman, Surveyor General of Oregon; September 30, 1860, Eugene City, Oregon."

Plaintiff's Exhibit No. 29; entitled "A Diagram of Public Surveys in Oregon, Surveyor General's Office, Eugene City."

Mr. BLACKMAR. I do not see any date on that. It contains a further notation "House of Representatives, Executive Document, 37th Congress, Third Session." We can supply that information later. (R. 358.)

Plaintiff's Exhibit No. 30, entitled "Bancroft's Map of Oregon, Washington, Idaho, Montana and British Columbia, published by H. H. Bancroft & Company, Booksellers and Stationers, San Francisco, California, 1868."

Plaintiff's Exhibit No. 31, map entitled "J. R. Gill & Company's Map of Oregon," apparently published at Portland, Oregon, in 1878.

Plaintiff's Exhibit No. 32, map entitled "Map published by the Engineers Office, Department of Columbia, by Lieut. Thos. W. Symons, Corps of Engineers, 1881."

Plaintiff's Exhibit No. 33, which is from an article in the Saturday Evening Post, dated February 9th, 1927, by Edward W. Nelson,

Chief of the United States Biological Survey. The only part that is offered (R. 359) in evidence is the photograph of the old wagon road through Goose Lake together with that part of the text explaining that.

Mr. BLACKMAR. Yes. I will have that all fixed up. The rest of it has to do with bird life and is not pertinent here. That is all I have of Doctor Clark. (R. 359.)

(NOTE.—Upon agreement of respective counsel, plaintiff is to supply a photostatic copy of Dr. R. C. Clark's rough hand sketch of a map drawn by Peter Skein Ogden during his expedition of 1826–1827, and which was part of his diary, and it is to be marked Plaintiff's Exhibit No. 34.) (R. 362–363.) This has been supplied.

4. Supplemental reports of Dr. R. C. Clark

a. Report on direction from which John Work approached Harney Lake

By agreement of respective counsel Dr. R. C. Clark promised to furnish certain data after the trial of the case at Burns, Oreg., relative to the starting point of a journey made by John Work when he arrived at Sylvaille's Lake July 2, 1831, after a nineteen-mile trip (R. 364–365). Dr. Clark now submits, in accordance therewith, the following statement which, upon further agreement of respective counsel is now made a part of the Record, together with the excerpts from the Quarterly of the Oregon Historical Society for September, 1913, containing a Journal of John Work which was edited by T. C. Elliott.

Pursuant to my statement in the Record, pages 364–365, I herewith furnish the information concerning the direction from which John Work approached Harney Lake on his arrival there July 2, 1831.

John Work, a chief trader of the Hudson's Bay Company, led a trapping and trading expedition into the Snake River country during the years 1830–1831. On this trip he kept a day-by-day journal which has been published in the Oregon Historical Quarterly, Volumes 13 and 14. From his narrative it is possible to follow his route in detail. His route followed in general the Snake River until May, 1831, when he turned up one of its southern tributaries, the Raft River, which he followed into what is now northern Utah. From its sources he turned westward across what is now northwestern Utah and northern Nevada trapping the tributaries of the Owyhee River, which flows into the Snake, and of the Humboldt River. On June 24, 1831, he crossed what seems to be the present Santa Rosa Mountains. The next day a journey of about twenty miles in a general northwestward course brought them to a small southward flowing stream, no doubt a tributary of the modern Quinn River. During the next three days, June 26–28, their course

lay generally to the northwest across the head waters (other tributaries) of the Quinn River, to reach a "small rivulet" which as it flowed northward was thought to be a tributary of the Owyhee River. (Oregon Quarterly, Vol. XIV, p. 307.) After leaving the Santa Rosa mountains they had traveled 63 miles northwestward. By tracing the route on a modern map the "small rivulet" reached June 28 seemed without doubt to have been a tributary of the modern Trout Creek which flows north but does not flow into the Owyhee.

On June 29 Work and his party, after leaving the small rivulet on which they had camped, traveled 28 miles north, northwest, "first across a plain and salt swamp and over a range of hills and across another valley part of which has the appearance of the bed of a lake, but is quite dry and hard, and encamped near the foot of a mountain covered with snow." The lake mentioned is probably the modern Tumtum Lake. They had now reached the western end of Steen's Mountain. On June 30 the journey was continued along the foot of the mountains 18 miles N. by W. passing two small lakes, one of which was no doubt the modern Wall Lake. On July 1, the road still lay along the foot of the mountains N. W. 12 miles. "Part of the road very hilly and very stony, the stony road and continued mounting wearing out the horses' hoofs and rendering them lame." The little creek on which they camped, probably the modern Jackass Creek, "barely affords sufficient water for the horses to drink." On July 2 they traveled 19 miles N. W. to "Sylvaille's Lake" (Harney Lake).

It is to be noted that Work had with him Payette, who had been with Ogden in 1826–1827, and had twice visited this region. He was with Ogden when the river and lake were named after the trapper Sylvaille. On his return trip in 1827 Ogden had approached Harney Valley from the southwest. Payette was in familiar territory and could guide Work's party directly to the lake which had been named Sylvaille's Lake and would make no mistake on that point. Ogden calls him "a reliable fellow." (Ogden's Journal, Oregon Historical Quarterly XI, p. 215.) The next day July 3, they reached "Sylvaille's River" after "traveling along the lake and across a point in rather a circuitous road nearly W. N. W. 20 miles." It seems from this description that they must have crossed the "Sand Reef," and then turned eastward to reach Silvies River. With Payette as a guide the party would no doubt follow the route taken by Ogden in 1827. Afterwards their route lay up Silvies River and across the mountains to Day's River on July 10. (Oregon Quarterly, Vol. 14, p. 311.)

The evidence that Work passed to the west of Steen's Mountain rather than east of it to reach Harney Lake seems conclusive. Work's estimate of the distance from the western base of Steen's Mountain to Harney Lake at 49 miles is approximately correct. The distance

around the eastern side of Steen's Mountain to reach Malheur Lake is seventy miles or more. Work describes the road as very stony. This condition is not true on the east side of the mountain but accurately describes the condition of the ground on the west side. The road followed by Work, was lacking in water. This is true of the west side along the route he must have followed, but not true of the east side of the mountain because of numerous small streams that flow across the road in that direction. The direction of the route on the east side of Steen's Mountain would have been northeast while Work's route lay to the west of north. There is in addition the strong presumption that Payette would have guided the party on the most direct route to Harney Lake, namely that on the west side of Steen's Mountain. When he reached the lake that had been named Sylvaille's Lake he would have recognized it and not confused it with the other lake now known as Malheur, if that body of water was then in existence, and had it been reached by a journey that led to the east of Steen's Mountain.

Again Work's description of the water of the lake, quoted in my original evidence, as unfit to drink, very bad tasting, fits Harney Lake.

(Signed) R. C. CLARK,

EUGENE, OREGON, *April 7, 1932.*

The following are excerpts of the important parts of the John Work's journal of 1830–1831:

The Quarterly of the Oregon Historical Society, Volume XIV, No. 3, September, 1913

Journal of John Work's Snake country expedition of 1830–31, second half. Editorial notes by T. C. Elliott

This Quarterly printed in Vol. XIII, No. 4, the first installment of the journal of John Work, a trader of the Hudson's Bay Company, covering his trapping expedition to the Snake country in the year 1830–31, with an editor's introduction; the second and final installment is now presented. The original of the first part of this journal was found in London, but curiously enough this latter half comes from quite another source, namely from the family papers of the late William Fraser Tolmie of Victoria, B. C. Dr. Tolmie married one of the daughters of John Work. No opportunity has been afforded for the writer of these notes to compare his copy with the original, but some few apparent errors, chiefly in proper names, can not affect its general reliability. (P. 280.)

Sunday, June 24th. Clear, fine weather.

Crossed the mountain 19 miles W. N. W. Road very hilly and stony. From the steepness and highness of the mountain and the badness of the road this was a most harassing and fatiguing day (p

306) on both the men and horses. We find tracks of Indians but none of them approach us. The best hunters of the party were out in the mountains, which have still a good deal of snow on them, in quest of sheep, but without success. They saw the tracks of some, but could not find them.

Monday, June 25th. Clear, warm weather.

Marched seven miles N. N. E. along the foot of the mountain, and 15 miles across the plain to a little river which runs to the southward, and which we found impassable, its banks having been lately overflowed, and remain still like a quagmire. The best hunters are out, but as usual did not see a single animal of any sort. One of the men, P. O'Brien (?) was under the necessity of killing one of his horses to eat. Thus are the people in this miserable county obliged to kill and feed upon these useful animals, the companions of their labors. We passed a small Indian camp, but the poor, frightened wretches fled on our appearance and concealed themselves among the wormwood. Only two men who were on ahead saw any of them.

Tuesday, June 26th. Very warm, sultry weather.

Marched five miles N. up the river to a place where we crossed one of its forks with little trouble, but the other, which was close, too, was very difficult; the men had to wade across it with the baggage, its banks are like a morass, and several of the horses bogged so that they had to be dragged out. Crossed a (p. 307) plain five miles N. N. W. to another fork, which we crossed without further difficulty than bogging a few of the horses. This was a most harassing and fatiguing day both on men and horses.

Wednesday, June 27th. Blowing fresh, yet very warm weather.

Continued our march 15 miles N. W. along the foot of the mountains to a small rivulet which falls into the river we passed yesterday. The road good but in places stony and embarrassed with wormwood. The hunters were out to-day but without success. Two antelopes were seen yesterday, which was a novelty.

Thursday, June 28th. Very warm weather, though blowing fresh the after part of the day. Proceeded on our journey 23 miles N. W. along the foot of the mountains, crossed the head of the river we left two days ago, and over the hill to a small rivulet, which is said to be a fork of the Owhyhee River. The road good, but in places stony. The hunters were out. F. Payette had the good fortune to kill a male antelope. One of the men saw four sheep on the plain, but did not kill any of them. (P. 307.)

Friday, June 29th. Blowing fresh, which rendered the weather a little cool and pleasant.

Marched 28 miles N. N. W. first across a plain and salt swamp and over a range of hills and across another valley, part of which has the appearance of the bed of a lake, but is quite dry and hard, and encamped near the foot of a mountain covered with snow. The road in some places stony, and from the length of the encampments

very fatiguing both on horses and people, neither of which (p. 308) have a moment's quietness either to feed or repose, they are so annoyed with immense swarms of mosquitoes. The hunters were out, but without success. They saw the tracks of some antelopes and sheep. Some Indian tracks were seen, but none of them approach us; some of them had horses.

Saturday, June 30th. Warm and very sultry in the morning, a breeze of wind afterwards.

Continued our journey along the foot of the mountains[1] 18 miles N. by W., the road good. Passed two small lakes, in one of which the people found a good many eggs. S. Kanota killed an antelope, and F. Payette a young one. A. Letendre had to kill one of his horses to eat.

Sunday, July 1st. Fine weather.

Our road lay along the foot of the mountains 12 miles N. W. Part of the road very hilly and very stony. The stony road and continual mounting wearing out the horses' hoofs and rendering them lame. Though the mountains in our neighborhood have still patches of snow on them, the little creek where we are encamped barely affords sufficient water for the horses to drink. The hunters killed nothing to-day. J. Despard killed one of his horses. (P. 308.)

Monday, July 2nd. Fine weather.

Continued our journey N. W. 19 miles to Sylvalle's Lake.[2] (P. 309.) The road part of the day stony. The lake is unusually high, and the water brackish and so very bad that it is like a vomit to drink it. The hunters were out but without success. There are a number of wild fowl in the lake, but they are so shy that they can not be approached.

Tuesday, July 3d. Warm, sultry weather, a thunder storm in the evening.

Our road lay along the lake and across a point to Sylvalle's River[3] in rather a circuitous road, nearly W. N. W. 20 miles.

The road good. Some of the men set a few traps, they saw the appearance of a chance beaver.

Wednesday, July 4th. Very warm, but blowing fresh afternoon.

Continued our journey up the river 15 miles N. N. W. to the first rocks. The horses like to be devoured by gadflies. F. Payette went to hunt yesterday and returned to-day with two antelopes. L. Kanota also killed two. The traps which were set yesterday produced four beaver.

Thursday, July 5th. Very warm weather.

Did not raise camp in order to allow the horses to repose, of which they are in much need, they having marched 19 days successively without stopping a day to rest. They have been becoming lean for some time back and their hoofs are so much worn that some of them

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[1] Stein's mountain. [2] Malheur Lake. [3] Silvies River.

are becoming lame. The most of the people set their traps (p. 309) yesterday, 13 beaver were taken. The hunters were out. A. Houle killed a chevereau and the boy, Prevost, an antelope. Four Indians paid us a visit; they had nothing with them to trade; they received a few trifles, and promised to return with some roots to trade. (P. 309.)

Friday, July 6th. Fine weather.

Marched about, 18 miles N. N. W. across a point, and fell again upon the river, by this road it is shorter than by following all the turns of the river. The people out with the traps, five beaver and one otter taken. In the morning one of the men arrived with a load of young herons, he found a place where they were very numerous. Some more of the people who are short of food immediately went to get a supply. These birds are very fat. Some of the people say they are very good, other say that they are scarcely eatable. Some of the people went off to hunt and have not yet returned.

Fine weather.

Saturday, July 7th.

Continued our journey 20 miles up the river N. N. W. Road stony, hilly, and uneven. Five beaver were taken. The hunters arrived. A. Houle killed one elk and three black-tailed chevereau, and the boy, Prevost, one young elk. The men with the camp caught a wounded deer out of the river.

Sunday, July 8th. Fine weather.

Proceeded up the river 15 miles N. N. W. to the head of the second valley. Three beaver were taken. Some antelopes seen crossing the valley, but none taken. (P. 310.)

Monday, July 9th. Fine, warm weather, blowing fresh afternoon.

Left the river which is enclosed by steep hills, and struck across the hills and fell upon the river at the head of the upper valley at the foot of the mountains, a distance of 13 miles N. W. The road good. The hills we passed in the morning well timbered with lofty pines, the valley is clear of wood except some willows along the different forks of the river. Two hunters were out. A. Hoole killed an antelope, and T. Senatoen a chiveau. (P. 310.)

Tuesday, July 10th.

Very warm weather, still a breeze of wind in the afterpart of the day. Crossed the mountains to Day's River,[4] a distance of 22 miles N. W. The road very hilly and steep, particularly the N. side of the mountain. The mountain is thickly wooded with tall pine timber. Both people and horses much fatigued on nearing the camp, part of the road stony. Day's River is well wooded with poplar and willows. Two Indians visited our camp this morning and traded five beaver. (P. 311.)

[4] John Day River.

UNIVERSITY OF OREGON,
DEPARTMENT OF HISTORY,
Eugene, Sunday, April 10, 1932.

MR. RANDOLPH S. COLLINS,
Attorney, Department of Justice,
Eugene, Oreg.

DEAR MR. COLLINS: I have very recently learned of and examined a diary of Jesse Harritt, dated 1845, relating to the Harney Valley. I have examined it and because of its importance wish to include it as part of my testimony. I will write up a statement and submit it to you without delay.

I have also very recently learned of a diary written in 1853 by a man who went with a party into Harney Valley in that year. I know some of the contents of it and I am satisfied that it also is a very important document to be considered in the case. I have been unable to get it from the lady who now has it, a Mrs. George McClean, who resides in this city. I am sure you will be successful in obtaining it for me so that I may study it and include it in my testimony. I know it is a very complete diary, perhaps the best we have on detail of that country at that time. Mrs. McClean I have just learned is absent from the city, but I expect her back to-morrow. I do not know what it says with regard to the lakes in question, but I am satisfied of its authenticity and of its importance in this case.

It is my request and suggestion therefore that you remain here until we get it so that after studying it I can prepare a statement about it to be considered as part of my testimony.

Mrs. McClean has indicated to me that she did not wish to let me have it because she wished to write something about it for publication.

Should we be successful in getting it our time and energy will be well spent, I am sure, because these two diaries of 1845 and 1853, respectively, will fill in a gap that now exists in my testimony between 1831 and 1859. Moreover, the diary of 1853 will bring the history of that country up to within six years of when Oregon was admitted to statehood, and it may corroborate what I have already said on the subject as covered by my testimony.

Sincerely,

(Signed) R. C. CLARK,
Chairman, Department of History.

b. The Harritt Diary of 1845

Supplementary testimony of Dr. R. C. Clark in Malheur-Harney Lakes case for the purpose of filling in gaps in the historical narrative between the expedition of John Work in 1831 and the Wallen expedition of 1859. Since my appearance as a witness in the case I have discovered two diaries, then unknown to me, written by men who visited the lakes region in 1845 and in 1853.

The first of these diaries was written by Jesse Harritt, who crossed the plains in 1845, and is a day-by-day record of distances traveled,

streams crossed, and incidents of the trip. The entries are for the most part brief but from it the route of travel may be traced with approximate accuracy. Harritt's wagon train reached the crossing of the Malheur River by the Oregon Trail (the route most usually followed by the emigrants to Oregon) on August 24, 1845. Here he and others, some two hundred wagons, were persuaded to follow Stephen Meek by a route directly westward for the purpose of reaching the Willamette Valley by a shorter road. The Harritt diary is published in the Transactions of the Oregon Pioneer Association for 1911 and is followed closely in this narrative with pertinent quotations.

On August 25, 1845, the Meek party after crossing the Malheur River left the Oregon Trail and traveled up that stream a little south of west 13 miles and the next day followed it for 10 miles. On the 27th, leaving the Malheur to the left and turning gradually to the northwest, they traveled 12 miles to the head of a small sinking rivulet. The next day, five miles southwest to a small stream and on the 29th, 12 miles over the mountain to a spring. The route can best be followed on the Dixon map (Plaintiff's Exhibit 25) which shows the road surveyed by Wallen in 1859. The distance traveled these five days, 52 miles, corresponds with striking exactness to distances and directions indicated on the Wallen survey on the Dixon map from the Malheur crossing to Ice Spring shown on that map. In like manner, the distances and descriptions of the Harritt diary show that his party followed the Wallen road to reach Harney Valley. After leaving the spring on the 30th they traveled ten miles "over huge mountains to a beautiful little branch." The next two days they made 10 miles up a stream, the north fork of the Malheur, a route identical with that shown on the Wallen map. On Sept. 2 they traveled 12 miles to camp on "a small rivulet" and the next day seven miles to what Harritt calls the "South Fork of the Malheur." The distance shown on the Dixon map from the North Fork of the Malheur to the main stream is approximately nineteen miles as given by Harritt. Without doubt Harritt had reached the main stream rather than its South Fork as he supposed. Quoting the diary entries for the next few days:

September 5. Made an advance of eleven miles and encamped in a deep hollow out of which proceeded a number of fine springs, affording us good water as ever run, with a few small willows.

September 6. As we advanced we gradually ascended a beautiful mountain; gained the top upon which grew a number of pine and cedar trees; a few miles farther a beautiful landscape appeared to sight; to the west a large valley; to the southwest the Cascade Mountains; to the northwest the Columbia River; we gradually descended this lofty mountain, entered the valley, down which we proceeded five miles; came to a beautiful little rivulet with its banks shaded by a few small willows, where we encamped, having come twelve miles.

September 7. Continued down this rich valley fourteen miles and encamped on Crooked River, a small murmuring stream running to the south shaded on its banks by a few willows. As we advanced this morning the beautiful scenery increased; this valley is one of the most sublime places I ever saw; it is from appearances from thirty to fifty miles wide from north to south, the length of which I am not able to determine; the soil is rich and beautifully set with fine grass, intermingled with patches of sage; the mountains to the north in places are thinly set with pine and cedar timber.

September 8. Road beautiful and level, traveled sixteen miles; crossed one small stream and encamped on the margin of a large lake; had an abundance of fine grass; no wood except sage.

September 9. Road sometimes delightful; traveled ten miles and encamped on a small stream affording good grass and a few small willows.

These diary entries clearly show that they traveled through Harney Valley to reach the present Silvies River, the Crooked River of the diary. The second stream crossed on Sept. 8 was the west branch of Silvies River and the lake reached on that day was Harney Lake. The small stream reached ten miles from the lake must be Silver Creek. From the latter point on the diary of Harritt shows that the Meek party traveled northwest to reach Crooked River and thence to the Deschutes River.

It is to be noted that Harritt mentions only one lake. His party probably followed a direct southwestern route well to the north of the Stampede Slough shown on the Dixon map or may have passed by the sloughs without making a diary note of them.

c. Diary of A. S. McClure of 1853—The Elliott Party

Another immigrant party reached the Harney Basin in 1853 by the same route followed by Meek. I have lately discovered a diary of this immigration that was kept by A. S. McClure one of a party of some 1,500 people who branched off from the usual trail at the Malheur in 1853 to reach the Willamette Valley by travelling directly westward. This diary has been preserved in the McClure family and is now in the custody of a son, Walter McClure, an attorney of Seattle, Washington. Its author lived to a good old age in Lane County, and in Eugene, Oregon, where he was for many years a leading merchant.

I have compared the McClure and Harritt diaries, have traced the distances and directions followed for each day, streams mentioned as crossed in the McClure diary with the Wallen route traced on the Dixon map and am convinced that the route of the party of 1853 into Harney Valley followed almost exactly that of Meek in 1845 and the one surveyed by Wallen in 1859.

The party of 1853 was led by Elijah Elliott and will be referred to as the "Elliott Party." McClure's diary indicates that the wagon tracks made by the Meek party in 1845 could still be seen and that

the route of that party as far as Harney Valley was followed. The excerpts from the McClure diary here appended (see Vol. II, pages 1051–1059, this Abstract) start with an entry of September 7, 1853. On the following day he arrived at the North Fork of the Malheur. On September 10 he reached what he supposed to be the South Fork of the Malheur. This must, however, have been the main, or as it is designated on some modern maps, the middle fork, of that stream. The leader of the party, Elliott, was in advance of McClure who arrived at his camp Sept. 11. This camp he describes as located "on a fine little stream of good water, coming from the mountains and running briskly through a level plain." Such description would fit no other stream but Silvies River. The "beautiful valley spread like a map before us" viewed from the hill before descending into it on Sept. 10 could be no other than Harney Valley. The description of the site of Elliott's camp shows it to have been high up on Silvies River, probably near the present city of Burns.

After interviewing Elliott, McClure and his fellows who had traveled ahead on horseback turned back on the trail for twelve miles to meet the wagon trains. On Sept. 13, recruited to a party of eight men for the purpose of hastening on to the Willamette Valley settlements to secure food supplies, McClure and his companions again turned westward. When they again reached "the creek," which apparently is the same creek on which Elliott had been camped, his messenger met them with word "to turn directly across the valley toward the point of a mountain range which sinks away in the north." No direction is given, but they moved on through a sandy sage plain without water until they had traveled about sixteen miles to camp on the same creek which they had seen farther up which McClure observed to appear dead, not flowing as briskly as farther up, and as probably entering the lake. They seem from this description to have headed for the "Wright's Point" of to-day and to have camped near it on Silvies River.

On the 14th the McClure party set off on horseback on a course of about south 20 degrees east through sloughs and tall grass for twelve miles. From this point it does not seem possible to completely reconcile the narrative of the diary with the known facts of the region through which this party passed but in my opinion they made their way eastward and southward around the head of where now lies Malheur Lake. At first, in the diary entry of Sept. 14, McClure mentions reaching a lake which he calls Tule Lake, but after circling farther to the west and viewing it from an elevated point on Sept. 16 he declares that what he supposed to have been a lake was in reality a swamp. It is difficult to understand why the water from this swamp should have tasted like lye when made into tea and should have seemed undrinkable as described in the diary. The mineralized stream, of which they could scarcely drink a sup discovered this day somewhere towards the north or east of the present Lake Malheur, I can not identify. But from this point onward

the narrative seems consistent with the known geography of the region.

On Sept. 15 after spending the night on the hills, the party traveled 20 miles about west following the low ground next the swamp to reach at noon a fine spring at the head of a marsh. This would seem to be the present Sodhouse Spring. Here, too, they came upon a stream that they took for granted to be the Deschutes that proved to be impassable. They were obliged to follow it up and south for some eleven miles before they could ford it. After getting across and taking a northerly course within two or three miles they came to another creek likewise difficult to cross. They were obliged to cut willows and make a crossing. In 1864 Captain Currey met with exactly these difficulties in crossing the two branches of the Donner and Blitzen River which he at that time named. (See this part of my original testimony, Vol. II, pages 1022-1023, this Abstract.) I am convinced that McClure and his companions crossed the two branches of this same stream. The diary also mentions the discovery of the snow mountains to the south (Steen's Mountain).

On September 16 they traveled back towards the swamp into which the stream, which had given so much trouble in crossing and which they thought to be the south branch of the Deschutes River, flowed. Forced westward by what "we supposed to be an arm of the lake, struck across the hills and when we had gained the summit, saw a beautiful sheet of water of many miles in extent. Here we learned the mortifying fact that what we supposed to be Tule Lake was not what we had encountered, but a swamp which forms the East branch of the Deschutes." The description of the lake reached on this day, September 16, shows it to be Harney Lake. The water is described as "very poor, tasting brackish and being impregnated with alkali." During the following two days the party traveled westward closely around the head of the lake, striking a fine valley with many springs, which can be no other than the present Warm Springs Valley, then to the east and south coming again to the lake on its north side. They then struck to the north until they reached a point within five or six miles of the camp on Silvies River from which they had started on September 14. The diary notes, Sept. 18, "we have been traveling four and a half days and have traveled nearly around those lakes without making any headway."

On Sept. 18 they turned westward to reach Silver Creek which they followed to the northwest and by the 20th were on the headwaters of Crooked River. They followed along the southern divide of this stream until they reached the Deschutes River and finally made their way into the Willamette Valley by way of the McKenzie River.

This diary fully supports the evidence given by the Army officers Wallen and Dixon in 1859 and 1860.

(Signed) R. C. CLARK.

Eugene, 4/18/32.

Excerpts from the Diary of A. S. McClure of the Journey Across the Plains—May 7, 1853, to October 15, 1853

The following relevant excerpts I have made and compared with the diary which is in my possession:

Encamped at the foot of the hill on a small creek which flows into Malheur.[1] Water tolerably good; dry grass plentiful.

Our cattle are weak and nearly exhausted and from no other visible cause but fatigue and hard roads. There are no loads upon the wagons, and the grass, such as we find, is plentiful.

Some of the men killed a cow this evening for meat. She was the fattest and we thought made fine meat. The mountains before us look to be impracticable for wagons. They are higher and steeper and more rugged than those passed over.

Mr. Elliott is thought to be about twenty miles ahead and seems to follow as nearly as possible in the footsteps of Meeks. The road is said to have been surveyed across the Cascades; hearsay is the only assurance.

Wednesday, September 7th. Started as soon as we could to collect our cattle and for four miles the road led down a gradual descent, touching the creek in several places, crossing a spring branch of good water, and passing through a fine bottom of grass. From here the trail takes a northwesterly direction for six miles and rises over the point from the mountain peak on the right. This part of the road is rough, rising very fast. The descent is long and steep, but tolerably smooth, being gravel. After descending this hill, we again came to Malheur but not the dull, stagnant, unhealthy stream that we found when we first saw it, but a bright, clear, sparkling mountain stream, running with a rapid current. About ten feet wide and two feet deep. Cool, good water for use. The mountains before us look to be impracticable for wagons, but Meeks and Elliott have both ascended and "*What man has done man can do.*" The valley here is covered with fine grass, the grass being three or four feet high and the wild rye as much as six feet. The former affording fine food for animals. The valley is from one to three hundred yards in width and bounded by high hills.

Some sickness in the train. No animals lost today.

Thursday, September 8th. From camp the road again led up the bluff on the right. East bank of the river. The road here nears the mountain peak on the left. The river on our left running through rocky canyons. Some distance onward the trail turns to the left, passing down a ravine and over some very rough points. We came to the river and grazed. Made about four miles in the forenoon. Found good grass. Here the leader of our train took two men with him and went ahead to examine the road. The teams were yoked and followed. We passed on and came to the crossing

[1] Malheur River.

which is about S. 60° W. from the mountain peak with a rocky top. The crossing is good. Mr. Mc passed on, ascending the rising ground, but after going some distance he sent a man back to stop the train, while he went ahead. When they returned, they stated the worst was yet to come; that there was a hill destitute of everything but rocks, which seemed to be striking directly across the range ahead. There is here and there a cedar which springs from among the large rocks on the sides of the mountain. This country is a little the most discouraging we have met—each ridge or range which we climb is but to bring another rougher, higher and more difficult to our sight.

Friday, September 9th. The crossing here is good, bottom solid and banks tolerably so. From the foot the trail leads up a rocky hill to the mouth of a ravine, which is extremely rocky. One mile from the ford we came on a plain which gradually ascends to the mountain. One mile farther we entered a ravine, which, if possible, is more rocky than the former and, being an ascent, made it very hard on the teams. Two miles up the ravine, which runs an easterly direction. Two miles from the head of this ravine over a better country and down hill, we came to a dry branch with water in pools and is running in some places. This stream runs about S. 10° E. The road follows down this stream one and a half miles, and turning to the left up a ravine, ascends the bluff. The ascent rocky. When on the hill, the trail takes a direction of about S. 30° West for about six miles, when it descends a hill and enters the valley formed by several branches. One mile onward brought us to water where we encamped, having traveled about twelve miles. The trail this evening passes over a country gradually descending and much less stony. Good grass here and water in some of the ravines. A stream ahead which, I suppose, is the South Branch of Malheur. The country looks better here; the soil blacker, richer, and more productive.

Saturday, September 10th. This morning, according to previous arrangement, four men were sent ahead to examine the country and see those ahead. Left camp about half past seven o'clock and in four miles, crossing the point between the valleys, came to a brisk running branch, tolerably good water. This part of the road is quite stony. From this we passed over several points of ridges. Pretty good road and six miles brought us to the South Branch of the Malheur. Here we found the grass on fire, which had caught from the fire of some of the emigrants ahead and, as it was near noon, we turned our horses loose and set about to extinguishing the fire. This being accomplished we unrolled our budgets and made a hearty meal of hard bread and beef with a little bacon.

After one hour's delay, we mounted and following the trail, which ascends the bluffs and leads off in a southwesterly direction—crossing the point of the mountain, came to a long hill. Here a counsel was called and it was agreed that Mr. V. S. McClure and Mr. Dening should return and Mr. Owen and myself proceed as far as we deemed

expedient and enter into such arrangements as we could to form a company to go to the settlements in advance of the train.

From the top of the hill, the trail leads down a ravine and crosses the valley of a dry branch. Some stagnant water in pools, which is four miles from the crossing of South Branch.

The grass is pretty good here, but the water is very poor. From the crossing of this stream the trail takes a southwesterly course, passing round a point again, turns to the west and, winding over stony ground in ravines and on ridges, it descends a hill and passes down a smooth valley to a very steep hill, which we descended and came into the valley of several small branches. Encamped on the second, which is about seven miles from the last water. Tonight we are encamped near Mr. Kinny's train. They have offered us hospitality, but not being in need we declined.

Sunday, September 11th. This morning we were cordially invited by Mr. Kinny to eat breakfast and, having but little provisions, we accepted. We were treated with much kindness. About 7 o'clock we caught our horses and, bidding our kind friends of "*Emerald Isle*" a good morning, we set out on our way. From camp the trail ascends the hill and, taking a southerly course, follows up the ravine four miles, then turning west it winds among the heads of the branches, which form what is termed the West Branch of the South Branch of Malheur. Here are some pine trees, and the cedars are quite numerous.

The mountains ahead appear to sink away and the country to become that of a small valley. We hoped for better roads. This part of the trail passes through a stony part of the country.

From this we appeared to be traveling downhill, and four miles after leaving the ravine we found ourselves on the brink of a hill with a beautiful valley spread like a map before us. This, we were satisfied, was the water of the Deschutes, or Fall River, as it is sometimes called. Going down the hill, which is steep and somewhat rocky, on the right in the ravine we found a small pool of water—not very good. From this the trail runs to the right and, following the ravine, passes round on the base of the hill and down the ravine into a broad valley. Three miles from the last water the trail nears a creek on the left with stagnant water in pools. Here we found Capt. Elliott's last night's camp. The valley is very level and, when the trail is well broken, will be fine traveling. From this creek the trail turns round the point of the mountain on the right, and four miles brought us to a small stream, issuing out of the mountain and forming a slough. Water rather poor; good grass and a good place to camp. Seven miles farther brought us to Elliott's camp, which we found to be on a fine little stream of good water, coming from the mountains and running briskly through a level plain which looks like a meadow. These streams run northward, perhaps emptying into the east branch of Fall River.

We found the Elliott train nearly out of provisions and had just killed an animal for food. They are in good spirits and seem to care little for their situation.

Monday, Sept. 12th. The arrangements being made with the captain we mounted our horses, promising to return in three days equipped for a trip to the valley.

Riding until about 10 o'clock and retracing about 12 miles of our yesterday's travel, we met Mr. V. S. McClure and Mr. Drury. We stopped at the foot of the mountain, turned our horses upon the grass and awaited the arrival of the train. They came up about 3 o'clock and we went into camp at the Dry Creek, at the camp of Elliott on the night of the 10th. The grass is very fine; a few willows for fuel.

We were overtaken to-day by some men from the trains behind who have encamped near us and intend to wait our readiness to start on the morrow.

The men of our train held a meeting for the purpose of making an arrangement for sending in for provisions.

Tuesday, Sept. 13th. Our train was astir early and, while in commotion to get us off, news was brought into camp that a lady in Mr. Miller's train died last night and would be buried some place along the road. This is the first death I have been near since starting. We got under way about eight o'clock and the company from our train, which consisted of the following individuals: J. Denning, B. F. Owen, and myself, joined five others from trains farther back on the road. On arriving at the creek we were met by a messenger from Mr. Elliott who was directed to turn the trains directly across the valley toward the point of a mountain range which sinks away in the north. From here we traveled about sixteen miles over a sandy sage plain without water, when turning a little to the right we struck a creek. The water looks and tastes well. Good grass here. Stopped to graze our horses.

While here Mr. Elliott came up and recognized Mr. Charles Clark of our train (pack train). The train passed us while grazing and stopped two miles down the creek—our train—the wagons started out after us and, if they followed our trail, they found larger sage brush than they have heretofore met. They will, most probably, be obliged to cut the road with axes. We replaced our packs, mounted our horses, and rode down to Elliott's camp. Mr. Elliott is in finer spirits than I have heretofore seen him. Grass is good beyond conception. It is from one to three feet high and of a very nutritious quality. Willows for fuel. This creek seems to flow into the lake, as it appears dead and does not flow as briskly as farther up.

Wednesday, September 14th. This morning we started about seven o'clock and taking a course of about South 20° East for twelve miles winding through sloughs and tall grass and nooned near the mound standing on the east side of the lake, which is called by some the Tule Lakes. The lake opposite this is a sheet of water which pre-

sents a beautiful appearance and is thronged by bevies of geese and ducks. The grass being poor and having no water, we did not stay long. After starting we again tried a course of about S. 45° W., but soon came to a creek which we found to contain water but so strongly mineralized that we could scarcely drink a sup of it. Facing about again, we found a crossing and tried to make the head of the lake; after some difficulty we succeeded and, being aware that we had no water ahead, filled our canteens and struck straight for the hills. Encamped on the hill. Some grass; no water. Made tea of the water we got from the lake, but found it so much like lye that we could not use it and drank water caught from a saddle blanket put up as an awning. In this way we did not suffer for water. It has rained since about three o'clock with occasional intermissions. Traveled about thirty miles to-day, much of that distance having been consumed among the sloughs which border on the lake.

The low ground next the lake produces tolerably good grass, but the water is unfit for use. The emigrant should avoid it as much as possible.

Thursday, September 15th. The wind arose early this morning and blowing a gale from the west, made the rain still more unpleasant. By finding a rock with a cavity on the top, we succeeded in getting enough water for breakfast. We started about eight o'clock and, taking a direction of about west toward a sharp peak of the mountain, followed the low ground adjoining the lake. We continued this course for about twenty miles, nooning at a fine spring at the head of a marsh. We arrived at the south branch of Deschutes. We found this river bordered by a beautiful valley of fine grass, but the depth of the stream and the softness of the stream prevented our crossing. We again turned to the south, and following up eight miles, passing several Indian Camps, we tried to cross, but mired a fine black mare belonging to Mr. Charles Clark and succeeded in getting her out with much difficulty. The banks are so soft that she would sink to her body with little exertion. We were obliged to draw her by the feet up a bank nearly perpendicular and about eight feet high. Encamped and built a fire to dry our clothes—the larger portion of us having plunged into the river when the mare mired.

Showery nearly all day and, after we turned round the point and struck a southerly course, we discovered the mountains before us covered with snow. While we ran shivering in a northwesterly rain, the snow was falling on the higher land. The small streams in this valley are very hard to cross and it is seldom that they can be crossed far below their issue from the mountain.

Friday, September 16th. Started at seven this morning and, winding our way up the stream for three or four miles, we came to two high mounds on the opposite side of the river. Here we found good crossing and, supposing we were over all difficulty, struck a northerly course. Travelling two or three miles, came to a small creek, which we found impassable from the softness of the banks.

Wandering along the banks for some time, we finally made a way of willows and crossed. We were all well satisfied that we were around those lakes and struck a northerly course, that we might gain some of what we have lost. We travelled back to the lake and, being forced westward by what we supposed to be an arm of the lake, struck across the hills and, when we had gained the summit, saw a beautiful sheet of water of many miles in extent. Here we learned the mortifying fact that what we supposed to be Tule Lake was not what we had encountered, but a swamp which forms the East Branch of Deschutes.

This is a beautiful little lake surrounded by high hills, with here and there a mountain peak towering above all the surrounding country.

Grazed on the bank and travelled up the lake a few miles and encamped. This water is very poor, tasting brackish and being impregnated with alkali. The water is muddy and unfit for use. The south bank is barren, producing very little grass—greasewood being the principal production. We are nearly out of provisions, only having started with enough for six days, and are more than one hundred and fifty miles from the settlement. The sky is overspread with clouds and it has the appearance of rain.

Saturday, September 17. The water was very poor, not fit for tea, but some of the boys made coffee and stated that it was not as badly affected. Rained on us at intervals during the night. This morning the clouds looked broken and we felt encouraged that we would have fair weather.

This morning we followed closely around the head of the lake and again turned our faces to the west. Passing round the lake, we struck a fine valley, which has many springs of good water flowing from the hills on the southwest. Mr. Tandy and Mr. Clark ascended the hill to look ahead at the country.

Hithertofore we had supposed this valley to be the outlet of the lakes above—but upon close examination we found that it was only the valley of a small stream formed by the springs on the sides of the hills. Learning this, our guides turned an easterly direction and struck for the Deschutes. Travelled several miles over a sage plain. Found no water but good bunch grass. No water here. We had but little water in our canteens. Consequently, we will be very scant.

Sunday, September 18th. A week has again passed off and Sunday is come and gone. No church here to greet and call us with its pleasant sounds; no kind friends near to ask us if we intend going to church; no affectionate associate to greet us with a hearty shake of the hand, ask us to dinner and politely attend us from his well supplied table. No, these are comforts we are not at this time destined to enjoy, but we heartily wish for them in a more appropriate place in a country and at a time when provisions shall be more plentiful. It has been said that we had but little water last night and that little was used for coffee. This morning we had none and proceeded to

cook our scanty breakfast, which consisted of a half a hare and enough bacon to season it. This, with pilot bread, made our meal and we caught our horses and were again off.

We again struck out easterly, which seemed to displease the whole. Mr. Clark is a fine man and is loved by all, but this was an error. He gave as his reason that we wanted to strike the Deschutes that he might make a proper start for the mountains. Varying a little to the south, we struck the lake again and watered our horses; even the horses seemed to drink this water from necessity and none of us drank of it. From this, after some deliberation, we concluded to strike a northerly course, dividing between the wishes of those who desired to go northwest and those who wished to go northeast and strike Deschutes. Travelling in this direction until twelve o'clock, we ascended a high ridge and found ourselves within five or six miles of where we left Mr. Elliott. We have been travelling four and a half days since leaving him and have travelled nearly around those lakes without making any headway or accomplishing anything toward effecting our object. Here all were consulted and we agreed to strike south 20° West and follow it as closely as the country will admit and until we can determine more fully where we are. Following this course, we soon came near to a valley of green-looking grass with willows in places—following along we could get down the rocky precipice which forms its southern bank. Here we found good grass and water for our tired animals and cooked a hare which we had picked up and ate heartily. We did not stop to graze or get dinner at noon.

Mr. Clark is quite unwell. In our windings we have travelled about thirty miles.

Monday, September 19th. Although we had grass and water in abundance last night, it was not sufficient to restore the strength of our horses. They moved very stupidly over the stones and some seemed as though they could go very little farther.

From camp we started up the valley, as it was the most direct course for the mountain peak we had in view. We found a little water in holes in some rocks in a ravine and stopped to graze about twelve o'clock. Two of the men ascended a high mountain nearby and returned much cheered, stating that they saw a broad valley which they supposed to be Deschutes, having previously been impressed with the belief that we had not come to that river.

When we passed over the ridge, we saw a beautiful green valley with a stream of water. All were cheered and encouraged. We descended, but found the water runs southward into the lakes below. This is a beautiful valley and contains some fertile-looking land.

The water is good. Made our supper for eight men of a sage hen, one piece of bacon and a little flour for thickening soup.

As yet we have seen nothing of the Cascade Range. Nearly out of provisions and perhaps two hundred miles from the settlement; we know not how far.

Our horses are failing fast. Several of us went out to look for grass but got none.

Tuesday, September 20th. Started about eight o'clock this morning and for eight miles, crossing the valley through a sage plain, we grazed on the ridge of the mountain and made some tea. The ridges passed over this evening were extremely rocky and the mountains covered with cedar.

Travelled about twenty miles to-day over rocks and rough ridges and encamped in a deep ravine, good grass and good water. Our provisions are nearly out, nothing being left but a little tea, sugar, and flour. We made a little mush or paste of the flour, which with some tea made a refreshing supper. Four of us went hunting. This seems to be a country of antelope, as the banks of the creek present numerous fresh tracks. One of the boys while out saw eight antelope.

The boys seem more encouraged this evening than yesterday. A rough prospect ahead, range after range and mountain behind mountain seem to present an impassable barrier to wagons and teams.

The days are clear and pleasant; the nights are frosty; the wind from the southwest.

Wednesday, September 21st. Nearly all the boys went hunting this morning and, although we saw numerous deer tracks, we were not able to see any deer. Started about nine o'clock, and, taking a northwesterly course, we came into a broad valley, but no water. We were so fortunate as to kill a sage chicken and made some soup. This revived our spirits and late in the evening we caught our horses and struck into the mountains on the west. Travelled until nine or ten o'clock and stopped for the night in a valley in the mountain. We searched all evening for water, but were unable to find any indications. While crossing the valley before spoken of, we saw a trail of some eight or ten horses, apparently from the valley. The men complain of much weakness and say that they can not go much farther without food.

The atmosphere is cool and pleasant. Travelled about fifteen miles to-day.

Thursday, September 22d. We caught our horses by daylight and struck for the summit of the mountain. Travelling a short distance, we came to a green valley that gave us hope of water. Searching diligently, we were not disappointed and watered our horses the first time for nearly twenty-four hours. Stopped here and killed a small rabbit and made a little soup. The men collected and came to the conclusion that they would kill an Indian pony which had been brought as a pack animal. The little animal, confident of the former kind treatment of its master, stepped up but to be murdered for the rescue of man. We cooked some as soon as possible and found it to be excellent meat. I was then cleared of the prejudice which my education had placed before me, and which is entertained by many persons in the States. To-day has been spent in cutting up, drying, and preparing our meat, as none of us know

that by going a northwesterly direction we must strike the Willamette or Columbia. The mountains here are steep and in many places rocky, making them hard to travel.

In the way of provisions we have a few slices of bacon, a little flour, and some tea. The ridges which are most rocky are covered with cedar. The principal production is sage. Our meat will last ten or twelve days, and in that time we will surely come out some place. The pony, which was two years old, was valued at forty-eight dollars, six dollars apiece.

Friday, September 23rd. To-day we struck a westerly direction, finding numerous streams of water issuing from springs.

Travelling several miles, we ascended the ridge and saw Three Sisters Peak. Every heart rejoiced and every person was seen to feel that we were again at home. The guides, Clark and Tandy, ascended a high mound on the left and saw the Three Sisters. This again inspired us with a newness of life. The men sat more erect in their saddles, the horses moved off freely, as if they too by instinct had discovered something to give them a newness of life. From the ridge we followed down a ravine until we came to a broad [valley]. Turning up this, we struck directly for Diamonds Peak, which lay N. 45° W. Travelling in this direction till late in the evening, we turned a northerly course towards the mountains for water. We did not reach it till night, when we found it composed of light sand and covered with cedar, which gave no hope of water. We camped here. Our horses have fine grass, but no water. Cedar for wood. It rained a little this evening, which wet the grass and will make it better for the horses until we can get to water. Our dried horse meat is rather dry to thirsty men without water.

S. Other Lakes

Evidence relating to

1. In general

Mr. Jeff D. Billingsley, called as a witness for the plaintiff, testified in substance as follows:

In April, 1880, I saw Juniper Lake which is fed by the waters from the Steen's Mountain that runs off on the other side, and at that time, the lake was probably a mile long and a half mile broad, not a big lake. In the second summer, 1881, we went bathing there, and the old timers said there was no bottom to the lake. You would go out ten feet from the margin or the border of that lake, and you would be in water over your head. (R. 386.) It was fresh water. In 1889 I saw that lake go dry. That was the year it was dry all over this country. In 1890 it filled up again. I believe that lake is dry now; I have heard it is; I don't know as I haven't seen it. (R. 387.)

I lived at Alvord for ten years and I do not know whether they called that Alvord Lake on the desert, or the one below. We always called that Alvord Desert right out from Alvord Ranch. (R. 387.) There was another lake down south of Wild Horse. I have heard it disputed. We always called that Alvord Lake, but I do not know which one was Alvord Lake. The lake I saw by the Alvord Ranch in April, 1880, when I came up from Winnemucca had a border of water. I have seen that lake dry. It is right by the Alvord Ranch. (R. 387–388.)

When Juniper Lake went dry in the latter part of the eighties, this lake that we always thought had no bottom we found sagebrush in it eighteen inches tall all over the bottom of the lake which showed us that at some time previous it had been dry long enough for sagebrush to grow there. (R. 388.)

Cross-examination:

With regard to the sagebrush stumps which I testified we found in Juniper Lake, I believe it is the theory that when wood is covered with water, it will last a great many years.

Mr. LILJEQVIST. Q. Sagebrush stumps would not throw any light upon the fact as to how many years before those sagebrush had been uncovered. As a matter of fact, they might have been preserved in the water for hundreds of years. Is that true?

A. They could have been. (R. 395–396.)

Mr. BLACKMAR. Q. It is equally true that it could have been rather recent, too?

A. Yes, sir. (R. 396.)

Mr. WILLIAM M. COLVIG, called as a witness for the plaintiff, testified in substance as follows:

In August, 1864, we came to Camp Alvord, there were no soldiers there, nothing except the remains of a camp called Alvord. We went on across the Alvord Desert, or they called it Alvord Lake. It is about fourteen miles long and about seven or eight miles wide. Now I have seen it when it was dry. It has dried up entirely and is a white lane of alkali. I remember a crow lighting on it would look as large as a camel and the most beautiful mirages were across that alkali flat. That lake was perfectly dry in August, 1864. (R. 401–403.)

Now, the way I remember it was the 10th of August, I was not exactly a poet in those days, but I wrote a poem:

"Twas on the 10th of August, 1864,
A party of us started under command of Sergeant Moore.
He was as brave a leader as ever drew a gun,
His head would stand for battle but his heels would always run."

I always remembered that, because I put it in my diary, so I know it was the 10th of August, 1864.

Mr. BLACKMAR. Q. Did Sergeant Moore appreciate that poem? (R. 403.)

A. Well, I think there were 36 verses of it.

Mr. BLACKMAR. We will let it go at one. (R. 403.)

I have had occasion in connection with my military services (1863–1866) to observe Warner Lake, Goose Lake, and Alvord Lake. It is well known to me and probably to others that the winter of 1862–1863 was one of the wettest winters they had known in Oregon. Rogue River overflowed its banks; and undoubtedly the snow was very deep in eastern Oregon. The first winter I spent in the army was 1863 at Fort Klamath. The snow was exactly six feet deep—to the top of my head, as we cut the trails before the (R. 407) officers' quarters and around to the various buildings, and I don't think it has ever been six feet deep at Fort Klamath since. That was in 1863 (R. 407–408), the winter of 1862–1863.

With reference to observing those lakes at that time, there was no stock or horses in the country, hence the cane and tules grew up until sometimes it was higher than my head, and you would look over the vast plain thinking it was nothing but tules and cane, but if you got up on a nearby mountain or hill, you would look out and see a body of water.

Goose Lake looked tremendous to my boyish imagination at that time as I had never seen a larger body of water; and in fact, when I came to Klamath Lake, which is forty miles long, I thought it was as big as the ocean, which I had never seen.

Then in the next spring (1864) when I came out to Goose Lake it was sixty miles long and I thought it was a great body of water. Since then, while District Attorney at Lakeview, I have made twelve or fourteen trips out there and I am well acquainted with it. I have seen men mowing hay with their machines out on part of Goose Lake that I know was covered with water in 1864; but the lake, I understand, is entirely dry; whether affected by canals on the California end or not, I do not know, but I do not think so. (R. 408.)

I have been acquainted with Goose Lake, Klamath Lake, Crater Lake, and all of those Lakes in those years covered by the dates I have given.

There was a chain of lakes, some of which were named and the rest went by the name of Warner's Lakes. Not Warner's Lake, but Warner's Lakes, because there was a chain of them. Lake Abert was named after one of Fremont's Civil Engineers. When I viewed Warner's Lakes at that time, there was plenty of water in them, and also in the Big Lake, but it was difficult for a man to see or to form much of an estimate on account of the cane and the tules which were growing up on the sides. Sometimes great reaches quarter of a mile out from the shore would be tules and cane and then you would come to the water.

Since 1864, I have seen Warner Lake. About seven years ago Mr. Liljeqvist took me out there. I was a witness on one side or the other of these questions. (R. 409.) He took me there and I said I would not testify about Warner's Valley unless they took me to the

several camps and through there where I had been in 1864. There was less water in Warner Lake at that time as compared with when I saw it in 1864. Now, that is as near as I can tell, because while in 1864 I did take some pains to make a little bit of a sketch, which Mr. Liljeqvist makes fun of, but this morning I felt highly complimented when I heard that General Fremont made a greater botch than I did when he got the Malheur River in the Malheur Lake. Mr. Liljeqvist found fault with my map because it did not have any scale. I got some of those lakes too big for him, especially Lake Carver, if I remember right. I have never been over Warner Lake after it became entirely dry. I have seen Warner Lake once since 1865 and that was when Mr. Liljeqvist took me through there. I have seen Goose Lake several times since the time I was District Attorney which was for three terms. I used to go there quite often. (R. 410.)

I have never seen the old emigrants' trail that runs through Goose Lake. People told me about it but I never tried to see it. (R. 411.)

Cross-examination:

It seems to be correct that I am not the only map maker on these military expeditions that could make errors in drawing diagrams of the early lakes. (R. 411.)

Mr. LILJEQVIST. Q. In those days traveling over that kind of country on ordinary horses in high water, when it was in July, about how far would you call a day's work when you weren't pressed for time, or marching on account of any Indian expedition, or the like; just going through the country?

A. Well, with the true expedition, of course, we had to go generally from water to water. We made a few dry camps when we were compelled to, especially down near the Nevada line, but ordinarily we could go 12 or 14 miles a day when we had big mule teams with the Drew expedition. We had a couple of scientists along, and I was surprised this morning hearing the Adjutant's Report, but there was no report of that expedition. (R. 411.)

Re-direct examination:

Mr. BLACKMAR. Q. Judge, in one of these reports that refers to a day's march of cavalry, could you give us any idea as to what was considered a day's march in this country for a cavalry outfit?

A. Yes, sir. If they were not accompanied with mule teams, and if they were in light marching order, or carried their supplies on pack mules, if they were anyways pressed, they might go 20 or 25 miles; sometimes 30 miles. I have known the time when we went faster than that, when there was somebody behind us pressing us on. (R. 412.)

Q. Of course, the field artillery, their march is very much smaller in a day?

A. Yes; only about 12 miles a day with those big wagons. That would be an average. (R. 412.)

Mr. MAURICE FITZGERALD, called as a witness for the plaintiff, testified in substance as follows:

I recall a lake near here (Burns, Oregon) called Junipero Lake. It is situated on the south side of Steen's Mountain. (R. 1791.) I was around that place in 1888 and part of 1889 when I had charge of the Junipero Rauch.

In 1888 Junipero Lake was almost dry; there was a little mud, it was still soft, but in 1889 it was almost perfectly dry.

I saw some sagebrush and greasewood stumps in that lake; there was one especially large greasewood stump in it, and other smaller ones, but there was one very large one. (R. 1792.)

Mr. WILLIAM L. FINLEY, called as a witness for the plaintiff, testified in substance as follows:

I know Goose Lake, which is on the south border of the State of Oregon.

I saw one end of the old wagon road which goes down and disappeared in that lake. I did not go across it. That was where the indications were very clear of an old road. Of course, I knew of the road through E. W. Nelson who told me about traversing or going across there when the lake had dried up.

Mr. BLAKMAR. Q. Well, among scientists and historians in the State of Oregon, it is commonly accepted that during the emigrant days Goose Lake was dry and this wagon road passed right through the lake bed?

A. Yes, sir.

Q. This was well known in the State of Oregon, so well known, one might say, it was a historical fact?

A. Yes, I think that is considered common knowledge; been spoken of a great deal.

The bird life there around Goose Lake, when I was there, was scattered. I really didn't investigate that to any great extent. There were, of course, birds all about on an area of this kind wherever conditions are favorable. I am much more familiar, of course, with Warner Valley, and especially in Lower Klamath Lake, because I investigated that country, but (R. 2308) I do not know much about bird life in Goose Lake. (R. 2309.)

(No cross-examination.)

Mr. ALPHENA VENATOR, called as a witness for the plaintiff, testified in substance as follows:

I have been around Goose Lake. (R. 2324–2325.) I first saw Goose Lake in 1866. At that time, there was water in it.

I lived right close to Goose Lake from 1878 until 1884. I moved here (to Harney Valley) in 1872, and in 1878 went back to Goose Lake, and returned (to Harney Valley) in 1884. My mother continued to live there (at Goose Lake) and I visited her practically every year during her lifetime. She died about ten years ago.

I have seen Goose Lake when it was entirely dry.

With reference to my observation of an old road that passed through Goose Lake: The first year we came to Goose Lake Valley, I was a little shaver, but I remember they went down fishing to what they called Wilson Creek, in Modoc County, California; it is half way down from the east side of Goose Lake; we camped at the mouth of Wilson Creek and there was a well defined road that I have visited since. At the present time the road is well defined. There was a well defined road that went straight into the Lake and I remember my parents talking about it then, and later on, and since then I have visited that place. The road went directly west across the Lake and came out on the other side, on the west side; part of it (R. 2325) forked and went south you might say to Yreka, California—toward Mount Shasta; and the other one turned in a northwesterly direction and went toward Drew Valley; that would be north and west. That would be going toward the Rogue River Valley, I never went down on the lake the last time I was there to look at it, but I have seen photographs showing the road in the middle of the lake at the present time. There is no water in Goose Lake at the present time. The last time I saw water in Goose Lake was about 1919 when I was there. I saw Goose Lake about four years ago, and it was dry. (R. 2326.)

T. Testimony of Louie T. Jessup, Civil and Hydraulic Engineer

EVIDENCE RELATING TO

1. In general

Mr. Louie T. Jessup, called as a witness for the plaintiff, having qualified as a civil and hydraulic engineer, and since 1913 employed in the Division of Agricultural Engineering, United States Department of Agriculture, testified in substance as follows:

At the time I was assigned to this case, I had done previous investigation work in Harney Valley, including Malheur, Mud and Harney Lakes, the Narrows, and in connection therewith, the country adjacent thereto, including the territory embraced in what is known as Harney Basin.

In 1927 I was borrowed by the Bureau of Biological Survey, which, at that time, desired to have some dikes located, and the estimates made of cost, with the hope of conserving the water supply reaching Malheur Lake, and the bureau desired information relative to the possibility of developing the artesian flow in the lake bed of Malheur Lake. So that I started in with the work in this particular case (now at issue) with that preparation, and what I have learned in connection therewith.

With reference to the extent of the investigation that I have made during the past year (1931), of Malheur and Harney Lakes, and the streams which flow into those lakes, and the exhaustiveness with

which I went into the conditions surrounding those lakes: I spent over two months investigating the conditions about Malheur Lake, and my instructions were to bring together all the data I could find bearing on this subject. (R. 2425.)

I think I have brought together all the hydrographic data available that have been published, and some that is unpublished.

I have investigated the bed of Malheur Lake in numerous places, and I have traveled entirely around the (Neal) meander line, with a few exceptions in the western part.

I have also attempted to bring together all the data I could find that might have any possible bearing on climatic conditions subsequent to those for which we have any records, and I have assembled all the records on meteorology that are available for this basin. (R. 2424–2426.)

I have prepared a Report (Plaintiff's Exhibit No. 52) which is the result of that investigation.

Plaintiff's Exhibit No. 53 is an Appendix to that Report. It contains all hydrographic data available with respect to Harney Basin, and contains other tables dealing with precipitation and the elevation of the surface of Malheur Lake.

Plaintiff's Exhibit No. 54 contains photographs taken along or from the Neal meander line of Malheur Lake. (R. 2426.)

2. Plaintiff's Exhibit 52—Report of Mr. Jessup

a. Hydrographs—Figures 1 to 16, inclusive

Mr. LOUIE T. JESSUP, called as a witness by the plaintiff, having qualified as a civil and hydraulic engineer, and since 1913 employed in the Division of Agricultural Engineering, United States Department of Agriculture, testified in substance as follows:

Plaintiff's Exhibit No. 52 is a report giving the result of my investigation, and included therein are 16 hydrographs, each designated as a "Figure," and numbered consecutively. (R. 2426.)

Figure 1. This hydrograph shows the outline of, and indicates the boundary of Harney Basin. It also shows the location of streams, lakes, towns, and of the various stream gaging stations.

Figure 2. This is a hydrograph showing the variation in the mean monthly temperature at Harney Branch Experiment Station (near Burns, Oregon). (R. 2427.)

Figure 3. This hydrographic shows graphically the variation in precipitation at Harney Branch Experiment Station (near Burns, Oregon). The results are expressed for the stream year (October 1 to September 30, inclusive), rather than for the calendar year.

The text of my Report (Plaintiff's Exhibit No. 52), shows the source, and also the data, from which this graph was made, which are all in that Report.

Figure 4. This hydrograph shows graphically the mean monthly evaporation at Harney Branch Experiment Station (near Burns, Oregon). It shows the evaporation for the month of July; this graph shows it to be about nine inches for the month of July.

Figure 5. This hydrograph is one which is the result of several efforts to extend the general information relative to climatic conditions back beyond the records available for this station. (R. 2428.)

This graph begins with 1850. However, these records, which are the average of five western stations, their precipitation is plotted by five-year averages. Therefore, the first point plotted is for the period ending 1854. There was not much choice (in selecting) the five western stations. I merely started for the five longest records I could find. Those stations were Great Salt Lake, Astoria, Stockton, The Dalles, and Sacramento. They were brought together with the hope that they would show major variations in climatic conditions with respect to the West. It was not expected that they would show minor variations similar to this particular locality.

Figure 6. This hydrograph is one which resulted from another effort to extend back the study of the climatic conditions. It represents the discharge of the Columbia River. It was thought that the discharge of the Columbia River might be a rough index as to climatic changes in the Northwest, and tributaries of the Columbia River are on, or at least this basin is surrounded upon two sides by tributaries of the Columbia River. These records are expressed here by five-year averages, and are in terms in variation from the mean discharge or normal flow. (R. 2429.)

With reference to tying in this graph, and the preceding one (Figure 5), to anything that we definitely know about Malheur and Harney Lakes. We have a sufficient number of both precipitation and stream flow records in Harney Basin to show that for a number of years there has been a deficiency in the supply of moisture in this area. Both of those graphs (Figures 5 and 6, respectively) have been below normal for a number of years. There are no records in Harney Basin for the early 1860's, but all other records in the Northwest show it to have been a very wet period, particularly in the early part of that decade; both this (Figure 6) and the preceding graph (Figure 5) are above normal for that period. (R. 2429–2430.)

Mr. BLACKMAR. Q. Let me ask you this: Is the present dry cycle in the Harney Valley reflected in the discharge of the Columbia River? That is, I don't mean directly, but does the Columbia River at the present time show the effect of a dry cycle?

A. It does.

SPECIAL MASTER: Let me take the last 20 years: We will assume you have records in respect to Harney Basin, and in respect to the Columbia, and in respect to Sacramento and Stockton and The Dalles and Astoria, and the like. Now, you find, do you, that there is a certain relationship between all of (R. 2430) them and a certain

similiarity of experience where you have the records, and you project that, if that is not a Hibernicism backwards.

A. Yes, sir; I find that in a broad general way climatic conditions over the West have varied in a very similar manner. As before stated, one would not use this method to attempt to determine the precipitation at Burns for one year during some previous time when records were not available, but merely to show whether a period of five years or ten years was apt to be above or below normal.

Figure 7. This hydrograph is the result of another effort to study variations in climatic conditions in the West and in the Great Basin. It is a gage height record of Great Salt Lake beginning in 1851, and extending up to date.

With reference to the experience of Great Salt Lake over a period of years as being in a way reflected by the experience in Harney Valley. In its broader aspect, we find it below normal at the present time. We find it above normal, for example, in the early and later 1860's. The record begins in 1851, which is a low point on the left-hand side of the curve. (R. 2431.)

Figure 3. This hydrograph is one which represents another effort to extend the climatic records back beyond those available. It is based on the rate of growth of tree rings in this (Harney) Basin. Four juniper trees were selected in the various parts of the basin, one north of here (Burns, Oregon), one west of (R. 2432) here (Burns, Oregon), and two in the general vicinity of the Blitzen Valley. Sections were taken from these trees, and the width of each ring was measured along four coordinal radii, which meant observation on several thousand rings. These data were averaged together, and expressed as a variation from the mean. That is to say, from the mean thickness of the ring, from the mean thickness of the rings for each particular tree. When these had all been put together the results were plotted on Figure 8, which shows the variation in ring growth year by year. Superimposed on this has been plotted the precipitation, the annual precipitation for the stream year in order to determine, if possible, whether or not there was any relation between the growth of tree rings and the precipitation in Harney Valley.

Mr. BLACKMAR. Q. Now, does that also show the result of your experimenting and your calculations?

A. It shows these two records plotted together, and the fairly close agreement between the two. (R. 2432.)

Figure 9. This graph is more of the same data. On the previous Figure (No. 8) only the tree ring data were plotted, which extended back to the beginning of the precipitation records in this (Harney) Valley. On Figure No. 9 the records have been extended back for 200 years, and the points are expressed on here in terms of the variation from the mean.

This graph shows that in previous years in this (Harney) Valley there were numerous lesser dry cycles, and at least two very (R. 2433) severe periods of drought previous to the present one. This calculation was made from the same data as the previous graph (Figure 8),

and it has the same data on it, except that this curve has been subjected to a process of smoothing. (R. 2433.) It appears that dry cycles have ceased to exist before, however, one of them lasted quite a long time. (R. 2433–A.)

Figure 10. This hydrograph is a graphical representation of the annual discharge of the Silvies River near Burns, Oregon, and the results are expressed in acre-feet.

My report (Plaintiff's Exhibit 52) contains an estimate as to the amount of water reaching Malheur Lake on the Silvies River for each year back as far as the records go. It begins with the stream year (October 1st to September 30th) 1903.

The Silvies River starts to spread out shortly after it leaves the mouth of the canyon here near Burns. The estimates (of the water eventually reaching Malheur Lake) were based on a few measurements which were made about 1912. During that year there were, of course, records at the regular station near Burns, and an engineer working under the direction of the State, I believe, attempted to measure all the surface water that (R. 2433–A) entered Malheur Lake below—at least the greatest part of the irrigated area.

Surface water is water that flows above the surface of the ground.

Mr. BLACKMAR. Q. Is the term "surface water" confined to the precipitation, or does it also include this water that spreads out in sort of a fan shape? (R. 2434.)

A. If there had been any precipitation on the area irrigated by the Silvies River below Burns it, of course, would have been shown in the measurements made near the northern boundary of Malheur Lake. The precipitation, however, during the irrigation season would have made very small difference.

In my report (Plaintiff's Exhibit 52) I have covered in there the effect of irrigation upon the amount of water that eventually gets into Malheur Lake.

A considerable part of the water that spreads out up there (north of Malheur Lake) is lost by evaporation and transpiration.

In my report (Plaintiff's Exhibit 52) I have not discussed to any great length the effect of tules upon evaporation, except that I have given an estimate of the amount of water used by an area covered with tules growth, as compared with the amount of water that will be (R. 2434) evaporated on a free water surface.

The main part of Harney Valley here near Burns and southward to Malheur Lake, is a delta built by the Silvies River.

Mr. BLACKMAR. Q. Now, is the gradient of the river between that point and the Bird Reserve sufficiently great so that there is produced a constant current in the Silvies River?

A. The velocity would not be constant, since the gradient is somewhat steeper at this end than it is down there. The channel of the Silvies River meanders back and forth over the valley and diverting sloughs take off from it. They all continue to conduct water slowly in the direction of the lake, except as it is retarded by vegetation.

(R. 2435) and trash in its channels and by numerous small dams and levies used to divert water for irrigation.

There is no delta over on the Blitzen (River), like there is on the Silvies River. That is to say, it is comparatively very small with reference to the Silvies Delta, and it does not exist there, for the reason that in portions of the Blitzen Valley prior to the construction of a large drainage canal there existed a large tule swamp covering perhaps 25,000 acres or more. Unlike the Silvies River, the Blitzen (R. 2435) River has been building up the Blitzen Valley, rather than the area after it comes out from the lower end of the valley.

There is not very much of a gradient slope over on the Blitzen (River) side.

Before the construction of the drainage canal (on the Blitzen River or south side of Malheur Lake) at least a considerable part of sediment was undoubtedly lost before it reached Malheur Lake.

In years of extreme high water there has been measured near the south boundary of Malheur Lake there much inflow into that lake through what is now known as the regular Blitzen (River) channel, and it also passed through the numerous bridges which you will note on the road which runs along that (1877) meander line.

Along the northern part of the (Malheur) Lake, near the present channels of the Silvies River, and where obviously old channels existed, are to be found natural levees that extend northward, which were built by the overflow of the Silvies River. In fact (R. 2436), such natural levees exist along both banks of most (R. 2436) alluvial and meandering streams.

Figure 11. This is a graph showing the mean monthly discharge of the Silvies River. It shows 80 per cent of the discharge of this river occurs during the months of March, April, and May.

Figure 12. This is a graph showing the annual discharge of the Blitzen River.

Figure 13. This is a graph showing the mean monthly discharge of the Silvies River and its tributaries. The month of greatest discharge is May.

Figure 14. This is a graph showing the relation between area and water surface elevation of Malheur Lake, Mud Lake, and certain divisions of Malheur Lake.

The data that went to the making of this graph were taken (R. 2437) from the map (Plaintiff's Exhibits Nos. 3 and 4) prepared by Mr. Pecore. A planimeter was run over each one of those contour lines, and the area below each contour line was determined, and the net results are plotted here.

Mr. BLACKMAR. The witness is referring to (Plaintiff's) Exhibit No. 3 (also Plaintiff's Exhibit No. 4). Mr. Jessup, assume an elevation on the water of 4,093 feet, and show his honor how you would arrive (R. 2438) at the area covered at that height of the water.

A. These numbers that run vertically along the left of the chart are elevations of the water surface in feet. They are referred to the

same datum as the topographic map. The numbers along the bottom of the chart give water surface area in thousands of acres. If one wishes to know the water surface area covered by Malheur and Mud Lakes when the elevation of the water surface is 4,093 feet, that point is found on the left-hand side of the chart and the line is followed to the heavy curve which is designated as Malheur and Mud Lakes. From that point you follow a line downward to the bottom of the chart, which shows that the water surface area was 49,000 acres and the elevation of the water surface in Malheur and Mud Lakes was 4,093 feet.

On that same chart are also computed the area of the water surface singly of Mud Lake, and also singly of Malheur Lake. I should like to add that we have a light line curve showing the relation of the area of Malheur Lake east of what is locally known as Graves' Island, which really is the (R. 2438) eastern boundary of the island area on (Plaintiff's) Exhibit No. 3. That was shown for the reason that at elevations about 4,092, or probably a little higher, the water in the main or central portion of Malheur Lake becomes separated from any water that may exist in the western part of the (Malheur) Lake, or at the Narrows, or at Mud Lake.

SPECIAL MASTER. I understand if there were an elevation of 4,106 feet, that there would be practically 160,000 acres.

A. That would be practically 160,000 acres. (R. 2439.) I would like to add further that the heavy line is solid up to elevation 4,095. These were data that were taken from the accurate contour map. Above that point this curve is dotted, which indicates less accurate data. It was the best that was available from old State maps.

Figure 15. This is a graph similar to the previous Figure No. 14, except that it shows the relation between the elevation of the water surface of Harney Lake and certain given elevations. It was drawn merely for the purpose of following the steepness of the line or of the curve as compared with that of Malheur Lake. That is, it shows that the bank or the bed of Malheur Lake slopes far more gradually than does the bed of Harney Lake. (R. 2439.)

Figure 16. This is a graph that gives all of the available data that I could find relative to the water surface elevation of Malheur Lake. These data from 1903 to 1920 are the result of readings of a gage at the Narrows. The results are published in United States Geological Survey Water Supply Papers, and are all given in Appendix "A" (Plaintiff's Exhibit 53).

SPECIAL MASTER. The figures are Appendix "B" (A, Plaintiff's Exhibit 53), aren't they, or are they?

A. Yes.

Mr. BLACKMAR. That is Plaintiff's Exhibit 53.

(NOTE.—Mr. Jessup advises that if the word "Figures" refers to drawings or graphs, the answer should have been that they are a part of the Report, and are included in Plaintiff's Exhibit 52.) (R. 2440.)

It should be explained that there are a few points located here which are not official or not published with reference to the gage at the Narrows, and I think some of them are probably obtained by Mr. Dodge. It should be further explained that below elevation 4,092 and probably below elevation 4,093 there ceases to be any relation between the elevations given at the Narrows and the main body of the (Malheur) Lake. These figures as given in the Water Supply Papers are merely given as readings on the gage. I have changed those to elevations, using the same datum as the contour map (Plaintiff's Exhibit No. 3). The graph from 1921 to date is the result of records kept by the Warden, Mr. George Benson, of the Bird Reservation, and his gage was located well within the Neal meander line, and near the mouth of the Blitzen River. These records are unpublished. Also for (R. 2440) the year 1922 the State had some gage records which were kindly presented to me in an unpublished report. A graph of those records for the Narrows is also shown on Figure 16.

All of the data which formed the basis for these graphs (Figures 1 to 16, inclusive) are to be found in the tables in my Report, and explanations given. (R. 2441.)

Cross-examination:

With reference to Figures 2, 3, 4, 10, 11, 12, and 13. There are no official records for the year 1910 with reference to what the height of the water was in that (Malheur) lake, and I have no unofficial records listed in my report (Plaintiff's Exhibits 52 and 53).

Mr. LILJEQVIST. Q. Have you any records for the 28th of December, 1910, on the north side, at the Peterson place on the north side of Malheur Lake? (R. 2457.)

A. I have not included any such records in my report.

I have no records for the same place for March 8, 1912.

I have no records for the east shore of Malheur Lake for July 10, 1913; the only records presented in my report with reference to elevations of the water surface of the (Malheur) Lake are at the gage at the Narrows, and at the Biological Survey gage at the mouth of the Blitzen River; I think that is all. (R. 2458.)

With reference to Figure 16. I have no records for July, 1913, at the Narrows. There are records for June and August, 1913.

I have them (the records) for the Narrows for August 13, 1913; during that month the elevation of the water surface at the Narrows varied from 4,093.89 to 4,093.99.

I have no record at the Narrows for April 15, 1915.

The only record I have at the Narrows for 1918 was the unofficial record for April 21st of that year (R. 2458), which was 4,093.43.

These are the records that came to me from various sources. I believe the most of them in this unofficial table are Mr. Dodge's figures which I have attempted to adjust to the datum in the map (Plaintiff's Exhibit 3).

Mr. LILJEQVIST. Q. And outside of the adjustment to the two datums, you haven't any information or anything to indicate that those records are not correct, have you?

A. Nothing.

With reference to Figures 5, 6, and 7. The Great Salt Lake that I have testified about is in a part of the Great Basin. There are, no doubt, considerable differences between that area and the Harney Basin. It may, however, be described as a high, arid country. Comparing year by year, it is quite true that they may get a lot of rain and snow in that country, and not have it here, or vice versa. (R. 2459–2460.)

The other record that I took was at Astoria in a country where (R. 2460) it rains about 60 or 70 inches a year.

Mr. LILJEQVIST. And you know as a citizen that has lived in Washington and Oregon that unfortunately we have 60 or 70 inches of rain in the west coast there, and up here they are starving to death for water, aren't they?

A. Yes, sir. However, my comparison is not based on the number of inches, but rather the variation from the mean at each particular station.

Q. Well, wasn't there year after year, as you know it, on the coast, that they got all kinds of rain, and unfortunately it didn't get over the Cascades?

A. Speaking in terms of inches, that is quite true.

Q. Simply day before yesterday, in my home town, they had a tremendous rainstorm, according to all the reports, and we didn't have anything here at all.

A. Yes, sir.

Q. Taking it all and all between here and Stockton, of course you have a similar possibility of error, haven't you?

A. On a year-by-year comparison. (R. 2460.)

All of these stations would not show close correlation.

The Dalles would have closer climatic conditions (to that of Harney Valley). The precipitation is greater at The Dalles.

There would be no comparison on the basis of inches of precipitation between here and Sacramento. (R. 2461.)

With reference to Figures 8 and 9. The tree ring study covers 200 years. One of the trees was taken about six miles north of here (Burns, Oregon); another one was taken about 21 miles west of here (Burns, Oregon); another was taken on the divide between the Blitzen and the Catlow Valleys, and the other was taken approximately six miles north of Frenchglen in the Blitzen Valley.

Each one of those trees were not big enough to give 200 rings. As explained in the text (Plaintiff's Exhibit No. 52), two of them only went back approximately 160 years. The others were much older. The (R. 2461) text explains that from a certain date, the record is the average for only two trees.

The theory is that in dry years, the ring is very small in width, and in wet years, it is wider, and I find by my study of the water and the rings that it quite evidently had a connection.

Mr. LILJEQVIST. Q. That is a sort of a well known scientific fact throughout the country now, isn't it? There is a lot of study along that line by scientific men?

A. There is. However, you do not always find a close relation. The value of the data obtained depends entirely on whether you can establish an apparent relation between tree-ring variation and such precipitation records as you may have.

I have been at the Sand Reef and there is greasewood growing on it.

Mr. LILJEQVIST. Q. Now, I think some expert witness from out in the country here testified that on that Sand Reef the greasewood (R. 2462) or sagebrush would grow very rapidly. Do you agree with that?

A. It appears to have a vigorous growth.

Q. Did you make any studies, or did you cut any of it?

A. I didn't cut any of it, because I didn't see any large enough to interest me.

Q. It was too recent in years?

A. Yes, sir. (R. 2462.)

Q. There wasn't any way of getting back to our famous date of 1859, was there?

A. No, not by that method. (R. 2463.)

The gage in the Silvies River I think is approximately 12 to 15 miles above Burns, Oregon.

Mr. LILJEQVIST. Q. And the water flows out over the valley and drains down, and is there any way to tell how much gets into that lake after it flows out into this delta, or the lands called the Island Ranch and down below it into the Red "S" Fields, or out west of the east branch of the (Silvies) River?

A. I have attempted to make estimates of the amount reaching the lake based on the very few and meager data available.

My estimate of the amount of water which is lost which was based on the assumption that half of the area was covered with tules, was a depth of four feet per year.

Mr. LILJEQVIST. Q. Through the tules you mean, or in the tules?

A. For the entire area would be four feet per year for the entire lake, which is based on the assumption that half the area, at least, was covered with tules. (R. 2463.)

Q. Then every year it would have to rise and fall four feet?

A. No, sir.

Q. Let us get what you mean. Interpret that, will you?

A. If you had a body of water at Malheur Lake, into which there was no water flowing, at the end of one year it would be four feet lower.

Q. Let me put it this way, as a very unscientific question, I not being very much of a scientist: The loss of the water would be equivalent, then, each year to four feet, is that what I understand, in height or depth?

A. Yes; that is to say, if you had a reservoir in which there was no seepage, and into which there was no inflow and in which there was water, and in which tules were growing, at the end of one year the water surface in that reservoir would be four feet lower than at the beginning of the year.

Q. Well, to keep water over it, then, you would have to have water flowing in there in considerable quantities each year to keep the tules covered, wouldn't you?

A. It requires large amounts of water to maintain any considerable area on Malheur Lake.

"Transpiration" is the water used by plants which is passed by them into the air. (R. 2464.) That term does not include the loss at all of the water in which the plants are standing. (R. 2464–2465.)

Mr. LILJEQVIST. Q. Is there any way to tell what the comparison is between the loss of water where there are plants in it, such as tules, as compared with the open surface?

A. I have numerous records of tank experiments made with that object in view.

Q. Do you have that in your report?

A. I do not.

Q. Will you give us some of the results of your studies along that line?

A. The figure I adopted in my report was that a tule area would transpire and evaporate an amount equivalent to 150 per cent of the amount of water that would be evaporated from a free water surface. I have records that show that to vary in different experiments from 140 per cent to as high as 300 per cent of the amount of water lost from a free water surface.

Q. As I understand, then, where you have used the figure 150 per cent, you mean it would be 50 per cent more than the free water surface?

A. That is correct.

I do not have that in my report. (R. 2465.)

With reference to Figures 14 and 15. I have not made an estimate by the use of the planimeter of the area inside of the (Neal) meander line of Malheur Lake (R. 2465); nor of the Narrows, nor of Mud Lake, nor of Harney Lake. As far as I know we have not in this record, up to date, any true statement of the area of those lakes below the (Neal) meander line.

My Figure 14 is an attempt to show the relationship between area and water surface elevation, but I do not know how many acres are inside of those lakes.

SPECIAL MASTER. That is a projection which calls for areas which nobody claims are included within the lake. It gets up to 170,000.

Mr. LILJEQVIST. Yes, when it gets to a certain place; when it gets way up here.

The WITNESS. In no case did we limit ourselves by any meander line. We followed the contours of the (Plaintiff's) Exhibit 3 in this case as far as they were shown.

SPECIAL MASTER. You were showing what area would be included if the water were at levels to which it has never attained, even, is that not true?

A. In the higher portions of it?

SPECIAL MASTER. Yes. (R. 2466.)

A. Yes.

Mr. LILJEQVIST. Q. When it got to this 4,106, it would nearly flow out Malheur Gap, wouldn't it?

A. Well, it would be approaching close, but I don't believe it would quite flow out at that elevation.

SPECIAL MASTER. That system would tend to confirm the conviction that it was applied accurately to the areas involved in lower levels, would it? In other words, the higher you got the water, of course the more area would be involved.

A. Quite true, your honor.

SPECIAL MASTER. And if you got it up high enough it would cover the area which was traversed by Noah's Ark.

Mr. LILJEQVIST. That is probably where it went down the Malheur River.

Mr. LILJEQVIST. Q. Now, in Mud Lake which you have referred to in this Figure 14, I do not quite understand this line.

A. When it is at elevation of 4,095 it covers 6,500 acres in Mud Lake.

I do not know how many acres there are within the Neal meander line of Mud Lake, and I have no rough estimate of it.

Mr. LILJEQVIST. Q. Then the next line below that line, on Mud Lake, is a line running up here to 4,095 immediately below and between the (R. 2467) words "Lake" and "East" in the sentence "Malheur Lake east of Graves' Island."

A. Yes, sir.

Q. Now, what does this indicate?

A. Do you mean the term "Graves' Island"?

Q. You are referring to that projection there, are you?

A. Graves' Island is not named on the Government's Exhibit No. 3. It is a ridge or a chain of islands, rather indefinite, which extend in a southeasterly direction from Section 2, Township 26 South, Range 32 East.

Q. North of the lake.

A. And the curve with regard to which you inquired shows the relation between a given or a certain elevation and the area of Malheur Lake east of that ridge.

The second line that immediately follows that which comes up to the point below the word "island" in that sentence, is a curve which

shows the relation between certain elevations and area of water surface for entire Malheur Lake from the Narrows easterly.

So then, at the point underneath the island when the water stood at 4,095, you would have an area of 57,500 acres. That does not include all of Mud Lake, the Narrows, and Malheur Lake as shown on the chart; the curve to which you have (R. 2468) just now referred (R. 2469) refers only to Malheur Lake from the Narrows eastward.

Mr. LILJEQVIST. Q. And then the heavy line, where the point of the arrow points as Malheur and Mud Lakes, that gives it at an elevation 0.6 of a foot above 4,094, and gives an acreage for Mud Lake, the Narrows, and Malheur, of how many acres?

A. A little over 62,000 acres.

Q. You do not know whether that is the area inside of the (Neal) meander line of all those bodies or not, of course?

A. That area is not all within the (Neal) meander line.

SPECIAL MASTER. What area isn't, the 62,000?

A. That is, not all of the area, 62,000, is within the (Neal) meander line.

SPECIAL MASTER. Yes. In other words, if the elevation is "X" and the area 62,000, it doesn't necessarily follow that that 62,000 is all within the (Neal) meander line?

A. No, sir.

SPECIAL MASTER. Now, can an engineer take the Neal meander line and compute the acreage within it?

A. Yes, sir.

Mr. LILJEQVIST. Then I think, your honor, the Government ought to do it in this case. It is their map. I understand it is their own map, and I think it ought to be done by Mr. Jessup and Mr. Pecore and put in the record here. (R. 2469.)

SPECIAL MASTER. It seems to me one of the first questions one of the members of the court would ask, if it was pertinent to the issues, is how many acres were within these bodies.

Mr. LILJEQUIST. I should think so, too.

Mr. BLACKMAR. Very well. We will supply everything within the Neal meander line.

Mr. LILJEQVIST. All right. Can you try and separate it as between Mud Lake and the main part of the lake, and up at Graves' some place, and make your compilation severally and as a whole and put it in as an exhibit?

Mr. BLACKMAR. You want Malheur Lake?

Mr. LILJEQVIST. Yes, and Mud Lake, and the Narrows; that is one thing.

SPECIAL MASTER. How about poor old Harney Lake?

Mr. LILJEQVIST. They can run the planimeter around it all they want. I don't give a darn.

Mr. BLACKMAR. You want the Narrows, and Malheur, and Harney Lakes?

Mr. LILJEQVIST. I don't care about Harney Lake. What I want is Malheur, Mud Lake, and the Narrows as one thing.

SPECIAL MASTER. Jointly and severally?

Mr. LILJEQVIST. Yes. Mud Lake alone; then Malheur Lake up to this Graves' Island, that point that has been referred to (R. 2470), and east of it. It is not much of a job. All they have to do is run around (with a planimeter) in a machine. (R. 2471.)

SPECIAL MASTER. Why don't you run around with a machine?

Mr. LILJEQVIST. I cannot do it, and it is their exhibit. Maybe I will check up and see if they are right.

SPECIAL MASTER. It is in your answer.

Mr. LILJEQVIST. It is approximate; yes.

The WITNESS. May I suggest that locally called Graves' Island is rather an indefinite line with which to figure areas.

Mr. BLACKMAR. Well, would it be satisfactory to you if in addition to this we gave you Malheur Lake west of a line drawn north and south through the Sodhouse?

Mr. LILJEQVIST. Yes.

SPECIAL MASTER. I think it is very desirable that you should have a computation in respect to Malheur Lake west of a line drawn north and south through the Sodhouse, because that is constantly spoken of as an imaginary line dividing two different kinds of bodies of lake bed. One the dismal swamp, and the other, as Mr. Liljeqvist is almost crying out, the open water.

Mr. LILJEQVIST. The dismal swamp is what my opponents call it.

SPECIAL MASTER. I gave you a share and gave them a share.

Mr. LILJEQVIST. Your honor, the reason I mentioned Graves' Island is because in the direct examination of Mr. Jessup he referred to that point as a sort of a place when the (R. 2471) water went down it didn't go past it—— (R. 2472.)

SPECIAL MASTER. Yes; I know he mentioned that fact.

Mr. LILJEQVIST. (Continuing.) As a true dividing line, and possibly that is the only reason.

SPECIAL MASTER. I think it might be the subject of natural curiosity, if not of legal inquiry, how these tracks across the lake that are spoken of, where teams have crossed, divide the narrow of the lake.

The WITNESS. I have seen the (Malheur) lake when it had some water in it.

Mr. LILJEQVIST. Q. Now, as a water engineer, I want to ask you if it is not true from your study of the elevations made in this Government engineering and surveying that Malheur Lake itself, as distinguished from the flow in the Blitzen (River) and the Silvies (River) itself would have a current to some extent flowing westerly toward the Narrows? In other words, a lake current, as distinguished from a flow of the Blitzen and the Silvies (Rivers)?

A. There is undoubtedly a current between Graves' Island when there is any water to flow in that direction.

It is of a very low velocity, however.

Mr. LILJEQVIST. Q. When the water got to elevation 4,093 in the lake, assuming that it did, or does, or has, then there would be a flow from the (Malheur) lake itself through the Narrows into Mud Lake because of the elevation of Mud Lake and Harney Lake, isn't that correct?

A. That is approximately correct. The difficulty in fixing any exact point is that while the contour map (Plaintiff's Exhibit 3) shows that water (R. 2473) might pass if it had an elevation of only 4,092, I know from personal observation that tules and other vegetation growing there may prevent the water from moving very far westward until it gets somewhat higher.

Q. All right. Let us assume, Mr. Jessup, that in the southern part of the (Malheur) lake, as an example, west of the Sodhouse, the tules have been cut, the flags have been cut, and they have been burned, and they have been developing into a hay country, as you have observed it; now, isn't it true that when the water got at 4,093 that the water of the lake itself, as distinguished from any overflow of the Blitzen, would flow toward the Narrows and through the Narrows?

A. That is approximately correct, Mr. Liljeqvist.

Q. And you know from your study that there is movement in lakes, isn't that correct, Mr. Jessup?

A. There are various kinds of movements in lakes.

Q. So that if a man was out there in the middle of that southern half of the west half of the (Malheur) lake west of the Sodhouse and the water was at 4,093 he could not tell, as a layman, that (R. 2473) that was the Blitzen River flowing, as distinguished from the lake flowing, could he?

Mr. BLACKMAR. Just a moment. It seems to me that that question indulges considerable speculation. Really, I do not see how an answer to that question would contribute anything to the solution of the question of navigability here. (R. 2474.)

Mr. LILJEQVIST. So you think the court is perfectly able to answer that doubt and refute some of your testimony? All right, I will let it stand at that. I think so, too. It is perfectly apparent, as a matter of common sense. (R. 2474.)

b. Defendant's Exhibit X–1

Mr. LOUIE T. JESSUP, a witness called on behalf of the plaintiff, having qualified as a civil and hydraulic engineer and since 1913 in the Division of Agricultural Engineering, United States Department of Agriculture, on cross-examination testified in substance as follows:

In my testimony where I refer to the 1922 report, I am referring to the report Defendant's Exhibit X–1.

Mr. LILJEQVIST. Q. Now, from your study, Mr. Jessup, have you been able to find any errors in that report?

A. I attempted to work out on the datum, as used by Mr. Pecore, the elevation of the water surface at the various gages maintained by the State during that year, and there appeared to be some errors. (R. 2441.)

I can not give you the exact differences in elevation. I can state the points of which the greatest errors seem to occur.

The State gage at or near the mouth of the Blitzen River did not seem to correlate with the others in using the elevations which are the basis of this survey. The few readings which were available from the State gage on Pelican Island seemed to show a water surface elevation nearly three-tenths of a foot high. It should be stated, however, that the Government, as represented by Mr. Pecore, had no direct check with regard to elevations on a single State gage. Mr. Pecore took elevations on the nearest B. M., or bench mark, as described by the State. In studying the records of these various gages I was obliged to assume that there was no error in the State's records between their bench mark and the zero of the gage. I do not regard (R. 2442) the differences found as very serious or large. It is quite possible that the gage near Pelican Island would naturally run a little higher.

Mr. LILJEQVIST. Q. Would the wind blowing across that lake, of which you have heard so much in this case, have a tendency to show a little higher on the gage at Pelican Island?

A. Well, I would expect it to have had if read on certain dates. I would hardly expect it to average three-tenths of a foot. However, there were not very many readings on the gage (R. 2442) near Pelican Island.

I do not know what the difference was at the bench (mark) at the Court House (Burns, Ore.) and that at Saddle Butte. (R. 2443.)

c. Defendant's Exhibit X–6

Mr. LOUIE T. JESSUP, witness called on behalf of the plaintiff, having qualified as a civil and hydraulic engineer and since 1913 in the Division of Agricultural Engineering, United States Department of Agriculture, on cross-examination, testified in substance as follows:

In my study I have seen a copy of a map prepared by Cooper & Dodge, of February, 1914 (Defendant's Exhibit X–6).

Mr. LILJEQVIST. Q. Now, the datum upon which that survey was made, and the datum which the Government found in this case is a certain per cent different. Do you know what that is?

A. At the old bench mark at the Narrows—this is on information given me by Mr. Pecore, you understand.

The difference in datum is approximately .33 of a foot.

I did not go over that map (Defendant's Exhibit X–6) carefully in connection with this study. (R. 2443.)

I do not believe that that map of Cooper & Dodge (Defendant's Exhibit X–6) gives any elevation of the water surface for January and February, 1914. (R. 2443-2444).

Mr. LILJEQVIST. Well, I will check that up, and offer in evidence that the water level as shown on that map (Defendant's Exhibit X–6) is 4,094.6, according to the State's gage and datum, which we will have to compute this percentage we discussed heretofore.

The WITNESS. There is no official Government elevation of the water level of Malheur Lake for February, 1914. I have in my report a table giving miscellaneous and unofficial gage readings of Malheur Lake at the Narrows, Oregon, for the year 1914. They came to me rather by a (R. 2445) secondhand route. I think one of the Government men took them from Mr. Dodge's testimony in the Silvies (River) water (adjudication) case. It gives only one reading for 1914, and that is February 11, 1914. Please understand that this has been adjusted to the datum which is the basis of Plaintiff's Exhibit 3, and it is 4,093.7, as shown on page 199 of Plaintiff's Exhibit 53.

Mr. LILJEQVIST. Q. Now, then, as I understand, his datum that he used, based upon the bench mark at the Narrows, after adjusting it to the Government's data, as they used in this case, was 4,093.78 on February 11th, 1914, the water level of the lake, is that (R. 2445) correct?

A. That is my adjustment of the figure that came to me by the source which I have previously described.

SPECIAL MASTER. Did Mr. Dodge fix February 14, 1914, as the date that they finished that survey?

Mr. LILJEQVIST. No; it was in February that he gave it, 1914, and I am going to give the elevations and connect that up with our testimony.

SPECIAL MASTER: I think he said January and February, and I think that he gave the date in February that it was closed. I may be mistaken.

Mr. LILJEQVIST. I am not sure about that now.

The WITNESS. I presume that if any elevation was given by Mr. Dodge for that date for his soundings on Malheur Lake, it would have been with reference to the ice surface, and with reference to the main part of Malheur Lake. While I can not be positive on the basis of the date I have in this table labeled "Miscellaneous and Unofficial Reports," I assume it is for the gage reading at the Narrows. The gage reading at the Narrows, or the elevation of the water surface at the Narrows is not always the same. In fact, seldom ever is exactly the same as it is in (R. 2446) the main body of Malheur Lake.

I got secondhanded what the testimony was in the Silvies River (water adjudication) case, and I did not include it in my regular tables.

Mr. LILJEQVIST. Well, we will check that up. (R. 2447.)

The WITNESS. On pages 36 and 36–A, and 35 and 35–A, I have given a monthly and annual discharge in acre feet of the Blitzen and Silvies Rivers, respectively. (R. 2443.)

On pages 35, 35–A, 36 and 36–A, referred to in Plaintiff's Exhibit 52, I have given the stream years, from October 1 to September 30th. That is called the stream year in this record.

Mr. LILJEQVIST. Q. Now, Mr. Jessup, turning to those figures, the year 1912–1913, shown on page 35–A, it shows that year, according to the best figures you were able to work out from all these records, is a year 1.6 only below the mean; that is correct, isn't it?

A. This table shows that.

But it should be noted that the greater part of the figures for the year given for the stream year ending 1913 are prefixed by the letter "C." A footnote at the bottom of this table explains that this is not actual measurement, but that they are estimates made by F. F. Henshaw, former District Engineer of the (R. 2447) U. S. Geological Survey.

He was located at Portland in the Government service, and he is now with the Federal Power Commission in Washington, D. C. He was considered one of Oregon's best water men.

I do not know where he got all of his figures from, but the figure that I have now is based upon Mr. Henshaw's figures, a Government official, which he secured in some manner that I do not know of, except that they were not officially published. They were taken from unpublished reports made by Mr. Henshaw. That does not assume that they are incorrect, but obviously they were not included in the (United States Geological Survey) Water Supply Papers, because they were wholly estimates. They are the best figures that the Government is able to produce in this Record. (R. 2448.)

Mr. LILJEQVIST. Q. Then, for the period of time ending (R. 2449) September 30th, 1913, we have a water year, or a stream year, at which in Malheur region or on Malheur Lake, with the Silvies River flowing into it, using your 4,093 as a base, Mr. Pecore's map, you are within 1.6 of that mean, namely, the meander line, 4,093, aren't you?

Mr. BLACKMAR. Now, you are assuming that the meander line is 4,093.

Mr. LILJEQVIST. I am taking Mr. Pecore's testimony that it is the mean. It is the figure you have used all through your testimony.

A. You stated that this figure represented the inflow into the lake, which it doesn't. It is for the stream gaging station 12 miles above Burns.

That is the station at which all these figures on pages 35 and 35–A (of Plaintiff's Exhibit 52) are computed.

Mr. LILJEQVIST. Q. We will take that as being the best evidence we have?

A. Yes, sir.

Q. What I am saying is, at the end of that stream year, September 30th, 1913, it was 98.4, the percentage?

A. That is correct.

Q. Namely, 1.6 below the mean?

A. Yes, sir.

Q. And the mean in your report means 4,093 on the gage on the bench mark, doesn't it, or datum, whatever you want to call it? (R. 2449.)

A. The mean in this table is somewhat different from the mean elevation of the meander line.

Q. You are computing the mean as 4,093, aren't you?

A. The mean in this table refers to the mean annual discharge of the Silvies River at the Burns station. That is the table to which we are now referring.

Q. I thought elsewhere in this report where you used the word "mean" you were also correlating it to 4,093?

A. No, sir.

Q. Then your 100 per cent is the mean of the discharge?

A. The mean of the discharge of the Silvies River near Burns.

Q. Then on September 30th, 1913, you were within 1.6 of that mean?

A. That is correct.

Q. Now then, the other best evidence we have available is that in October, 1913, that there were 800 acre-feet that flowed past that gage, that is correct, isn't it? That is shown on page 35, isn't it, Mr. Jessup? In October, 1913, there were 800 acre-feet that flowed past the gage, that is correct, isn't it?

A. That is correct. (R. 2450.)

The estimate given for November was 1,200 acre-feet; the estimate for December 1,000 acre-feet; the estimate for January was 4,500 acre-feet (R. 2450), and the estimate given here for February is 3,000 acre-feet.

Mr. LILJEQVIST. Q. So that at the conclusion of the dry period for the stream year of September 30th, 1913, to the end of February, 1914, that you would merely have flowing past that gage the sum of those figures, 800 plus 1,200, plus 1,000, plus 4,500, plus 3,000, that is correct, isn't it?

A. That would be correct for the period October to February inclusive.

One or three thousand acre-feet would make very little difference in the elevation of the water surface of Malheur Lake.

Mr. LILJEQVIST. Q. Would 10,500 acre-feet, assuming it all flowed into the lake, raise the lake very much, or any appreciable amount? (R. 2451.)

A. You would have to base your question on some given area to start with before that question could be answered correctly. If the area of the (Malheur) lake were only 10,000 acres at the beginning of the period, it would raise the lake somewhat less than one foot. If the area of the lake were 40,000 acres at the beginning of that period of the inflow, it would raise it very, very much less.

Even on that basis, I have not taken into consideration the evaporation which might take place for a period of four months. I have merely answered the question that it was assumed all of this water got to the lake and stayed in there.

Mr. LILJEQVIST. Q. Assume that it flowed down the river into the lake. Then from September 30th to February 28th, you would have

the period of the minimum evaporation, wouldn't you, on account of it being the fall and the winter?

A. That would be the period of low evaporation.

Q. And I believe you have introduced a chart showing the actual evaporation studies, haven't you?

A. That is at the Harney Branch Experiment Station. I have made an estimate from that data of the annual evaporation loss on Harney Lake.

Q. Now, take the Blitzen (river discharge figures) on pages 36 and 36–A of your (Plaintiff's) Exhibit 52. Now that states "a" in front of those figures which shows a notation you have partial estimates. (R. 2452.) What estimates are those, and from where were they derived?

A. This table was put together from many figures. It doesn't represent the flow at any one station. It is the sum of the flow of the Blitzen River and numerous tributaries as they enter the valley. "a" or "partial estimate" means that for one of these streams, or possibly two out of the six used, the records may have been missing and were estimated, or it may mean several. The footnote "b" indicates that practically the entire flow of these several streams were estimated. Again, these estimates are not my own, but were made by Mr. F. F. Henshaw.

They are the best estimates that can be made, and those estimates show that there was flowing 97.1 per cent of the mean for the stream year ending 1914.

The 100.7 per cent of the mean is the estimated discharge of the Blitzen Valley streams for the stream year ending September 30, 1913.

Then, so far as any records are available, it shows that at that period, there was nearly 0.7 of one per cent (R. 2453) above the mean. It should be pointed out, however, that the mean given in this table is not comparable with the mean given for the Silvies River for, as indicated, these records quit with the stream year ending 1920. They are the mean of the period 1908 to 1920.

Mr. LILJEQVIST. Q. Well, then, that also was the dry period of the year, wasn't it? I am talking about an entire year. The most of October we will assume was the dry period in this country. From your knowledge of the climatic conditions, will you say that that was the end of summer, and the beginning of winter won't you, and the summer is the time you do not have any precipitation practically here?

A. The discharge during the month of October is low on the average.

In the column for October, 1913, November, 1913, December, 1913, January, 1914, and February, 1914, I have the estimates of the amount that flowed into the (Malheur) lake.

Mr. LILJEQVIST. Q. And the sum total of those figures would be the amount of water that had gotten into the lake by the time that

Cooper & (R. 2454) Dodge went out on this lake and actually made measurements?

A. No, sir.

Q. Well, explain why that is not true, and how far it is not true.

A. Because these measurements were made a very considerable distance from the mouth of the Blitzen River.

The principal one was made near what is known as the P Ranch at the head of the Blitzen Valley. The other streams measured are Mud Creek, Bridge Creek, and the Diamond streams, which include McCoy, Cucamonga, and one other. You will find all of these records in Appendix A of my Report (Plaintiff's Exhibit No. 53).

Mr. LILJEQVIST. Q. And assuming that all the water got into the (Malheur) lake, of course, that would show in those reports, then you would arrive at the quantity that got into the (Malheur) lake from these streams which is a very violent assumption that it all got down there, isn't it?

A. If we assume all of this reached the (Malheur) lake, it is only necessary to take the sum of those figures mentioned. (R. 2455.)

Mr. LILJEQVIST. Q. Let me put it this way, then: From your study of these records when Mr. Cooper and Mr. Dodge went out on the ice in January and February, of 1914, and took the water level on the ice, they certainly took it at a time when the water, from your knowledge of that country, would presumably be low in the (Malheur) lake, isn't that correct?

A. The records indicate that that is generally the low time, the time of low water in the (Malheur) lake.

Q. Have you anything in your records to indicate that in January and February, of 1914, the (Malheur) lake wasn't at a low point, and if you have any records, what did you find as to the condition of the lake at that time?

A. The only record I have for the early part of 1914 is the one previously mentioned, which is included in my table as "Miscellaneous and Unofficial Data." It is also so shown on the Figure 16.

Q. Then, if measurements were made in the ice through a hole cut in the ice at that point, and it showed a level of 4,094.6, and you would adjust that to the 4,093 used by the Government in this case, you would say if in the low-water period of the year they found a certain depth, that certainly in the summer there would be a considerably greater height in that lake, isn't that true?

A. As shown by Figure 16 on my Report, there are seldom any two years the same. In the early records the variation at the Narrows, at least they have been several feet. (R. 2456.) If we examined the record for the years 1921 and '22, we find that during the low season between those two years the water surface was a little over one foot lower than it was during the high season of 1922.

Q. In all your study of this country there is not any other engineer that you know of that went out upon the ice in the low-

water period of the year and took the levels in that (Malheur) lake and preserved that record, except Messrs. Cooper and Dodge?

A. I know of no other such records.

Q. And in your study have you found anything in the records to contradict the fact that they did find in the open part of the (Malheur) lake the elevation of that lake in February to be 4,094.6, according to their datum, which we will adjust to the Government datum in the method prescribed?

A. I made no study of the map prepared by Mr. Cooper and Mr. Dodge to check this elevation. To answer your question I, of course, found no evidence that it was wrong. (R. 2457.)

3. Comments by Messrs. Cooper and Dodge on report of Mr. Jessup, Defendant's Exhibit X 9

It is stipulated between the Plaintiff and Defendant that instead of taking the testimony of R. D. Cooper and M. V. Dodge in reference to the report of Louie T. Jessup, by questions and answers, that the following statement prepared by them, being their comments upon the said Jessup report, Plaintiff's Exhibits 52 and 53, be received in evidence and that such witnesses will testify as shown in such report. The same shall be received to all intents and purposes as if given under oath.

Tree Rings and Climate

Figure No. 9 in the Jessup report is a graph showing climatic conditions in Harney Basin, with relation to the growth of juniper trees, and is given in per cent of variation from the normal.

This study covers the period from 1735 to 1930, inclusive. Portions of the graph above the zero, or normal line, indicate that climatic conditions more than normally favorable to the growth of juniper trees characterized the years thus represented. The reverse is true for portions of the graph below the normal line.

Naturally about half of the graph is above the zero line, and half below.

If seasons favorable to the growth of junipers are also favorable to a heavy inflow to Malheur Lake, and vice versa, a line might be drawn parallel to the zero line on the graph representing climatic conditions that would tend toward a dry lake bed.

As a matter of definite record, Malheur Lake was unusually low in 1889, and still lower in 1930. The graph is at minus 30 in 1930 when there was still some water in the lake, and indicates that the climatic conditions had averaged well below normal since 1915. Assuming then, minus 30 as a "dry-lake line" the entire length of the figure, the graph shows about 10 years of record below minus 30, during some part of which time the lake may have been entirely dry.

In other words the lake was probably dry but ten years during the past two centuries.

The Jessup report, Plaintiff's Exhibits Nos. 52 and 53, appears to have been compiled for the purpose of defining the characteristics of Malheur Lake for the past seventy years or more. If an imaginary lake deduced from data in this report will correspond favorably with the lake as it actually existed at times when the depth of water was definitely known, then a lake so constructed might be taken as a reasonably accurate picture of the lake as it really was in years for which there is no other record.

For the year 1922, for example, start with water level 4,094.0 on April 1st and water surface area of 59,300 acres as given by the report.

Inflow for the stream year, nearly all of which is in 1922, is given as 126,000 acre-feet.

It is reasonable to say that 100,000 acre-feet entered the lake in April, May, and June. Evaporation for those months according to mean of records, would amount to 1.46 feet in depth. Evaporating from a constant area of 59,300 acres, evaporation would amount to roughly 86,000 acre-feet, leaving a net increment of water volume of 14,000 acre-feet, raising the surface to elevation 4,094.3 feet. The balance of inflow, 26,000 acre-feet, was probably about taken up by transpiration and flow to Harney Lake. But slight precipitation could have occurred, up to October 1st, and transpiration would not have been balanced by that agency. The amount by which these last assumptions may be in error would have no measureable influence on the elevation of the lake surface. Then, theoretically, the elevation of water surface on October 1st, 1922, should have been 4,094.3 less depth of evaporation for July, August, and September, 1.9 feet, making lake surface 4,092.4 feet. Cooper's report to the State Engineer of Oregon, 1922, shows water level near Pelican Point, September 30, 1922, as 4,092.5, or, corrected back to recent U. S. datum, the elevation would be 4,092.2.

The agreement between a lake of deduction and the real lake is remarkable in this instance.

Records for Malheur Lake are available for 1913, 1914, where again a computed lake may be compared with the real one.

According to the Jessup report Figure 16 following page 66, the water surface at Narrows about April 1st, 1913, was at elevation 4,093.5. It is a well established fact that at this stage, and at a time when the lake is receiving some inflow, the main lake surface is a few tenths of a foot higher than water surface at Narrows. In this case, say 4,094.0 which is in accordance with our observations. (Also see Jessup, p. 66.)

From Table 10, p. 71 (Jessup), the inflow into Malheur Lake for the stream year 1912–1913 was 105,000 acre-feet of water.

Discharge records of Blitzen and Silvies Rivers—1913 (Jessup, pp. 35–36), indicate that the heavy inflow came in April, May, and June.

Of the 105,000 acre-feet in 1913, estimate 90,000 acre-feet entering the lake in those three months. Discharge records show that this may be apportioned in the ratio of 2–5 and 3 in April, May, and June, respectively, making the inflow:

April, 18,000 acre-feet.
May, 45,000 acre-feet.
June, 27,000 acre-feet.

Assume that the remaining 15,000 acre-feet entered the lake at uniform rate—2,500 acre-feet per month until January 1, 1914.

Evaporation area April 1 (at elevation 4,094.0), is 59,300 acres. Mean evaporation for April is 0.32 feet depth, or 18,976 acre-feet. This is so near the same as inflow that surface elevation remains at 4,094.0 for May 1st.

Evaporation for May, (0.52 feet depth), represents a loss of 30,836 acre-feet. The inflow is 45,000 acre-feet, making a net gain, 14,000 acre-feet, raising the surface to 4,094.3, and area 60,800 acres for June 1st.

Evaporation, June, 0.62 feet depth, or loss by evaporation, 37,696, exceeds the June inflow by 10,696 acre-feet, and the surface elevation would have dropped to about 4,094.0.

July 1st, W. S. elevation 4,094.0, area 59,300. As this month has almost no inflow, but is credited with 0.77 feet depth evaporation, the mean evaporation area will be taken at 55,000 acres, making the net loss 42,350 acre-feet less 2,500 acre-feet inflow, or about 40,000 acre-feet. The W. S. elevation will have dropped to 4,093.3.

As we are computing a lake as of February, 1914, total evaporation since April 1, 1913, may reasonably be taken as 3.8 feet depth. Having already ascribed 2.2 feet evaporation from April to July, inclusive, there remains 1.6 feet to deduct from elevation 4,093.3, or 4,091.7. The slight inflow not thus far accounted would probably have held the surface to elevation 4,092.1 feet.

This should have been about the status of Malheur Lake in February, 1914.

As a matter of fact, Cooper and Dodge made an extensive survey of the lake at that time, and found the surface elevation of the main body of water to be 4,094.6. (U. S. datum 4,094.3.)

In this computation, transpiration has been assumed to have balanced precipitation in accordance with Jessup, p. 78.

Here we have the spectacle of a synthetic lake covering 36,000 acres and containing 49,000 acre-feet of water, while the lake that actually existed covered 60,000 acres, and contained 150,000 acre-feet of water.

Fragmentary records and indirect relationships do not appear to be reliable means for reconstructing the past history of Malheur Lake.

It is not assumed that the data in the Jessup report was expected to figure out the exact status of Malheur Lake in any particular year and day. Missing the facts for 1914 to the extent that the computed

lake covered but little more than half the area it should, and represented only one-third the volume of water actually present, does not indicate that even a general trend of five-year periods or cycles could be traced with much assurance. That the lake of 1922 figured out beautifully does not help a great deal. It emphasizes the fact that the method does not work twice alike, thereby precluding the possibility of applying a corrective constant coefficient, or even a variable coefficient varying by any law that can be conveniently defined.

Relation of Tule Growth to Lake Depth

With reference to that portion of the Jessup report relating to the growth of tule, it is apparent that the nature of the soil is a very important element and probably as much so in the growth of tule or other vegetation as is the question of an ideal depth of water for such growth. This is illustrated particularly in the area east of Cole Island where the depth of water is ideal for the growth of tule as compared with the western part of the lake, and yet there is an almost entire absence of tule growth in that portion of the lake. Accordingly any conclusion to be drawn as to the nature of the lake from the fact of tule growing therein without taking into account the nature of the soil in which the tule grow, is bound to be erroneous.

On page 81 of the Jessup Report appears this statement:

"The peat in this area can not be classified as deep peat, but during the last dry season the water table has been lower to a depth of several feet below the ground surface, and as a result the surface of this area must be lower by from 6 to 12 inches than it was when covered with water."

Defendant's Exhibit No. X–6 is a map made by Cooper and Dodge in the winter of 1913–1914, showing actual conditions then existing. This map shows from actual measurements the depth of the water as taken by soundings at various points, and also the depth of water and mud. The first figure in each instance is the measured depth where the ground was sufficiently solid to support the weight of the surveyor's level rod, being approximately 4 to 6 pounds pressure per square inch. The second figure was the depth of water and mud after the rod had been forceably pushed down, and would mean a pressure of approximately 100 pounds to the square inch, as we actually did the work.

The water surface at the time No. X–6 was made, was determined by running a closed circuit of levels from the U. S. bench mark at the Narrows to the Log Barn on the "Peterson Place" about one and one-half miles southwest of the mouth of Silvies River, and finding the level of the water in the main body of the lake in relation to this elevation. The elevation used for the U. S. bench mark at the Narrows was 4,096.20 and on this datum the lake level, near the log barn was found to be 4,0[illegible]. According to recent work done by the Government the elevation of the Narrows bench mark was found to

be 4,095.87, or in round numbers 0.3 feet below the datum used by us in 1914. Therefore, the elevation of the lake surface in February, 1914, based on present U. S. datum, would be 4,094.3, or 0.3 below the elevation used by us in 1914.

Referring to the soundings within the circle marked 5.0 on Defendant's Exhibit X–6, the greatest depth found was 5.1, making the elevation of the lake bottom 4,089.2 according to Government corrected datum.

Referring to Pecore's contour map, Plaintiff's Exhibit 3, the lowest elevation in the same vicinity and which is in the vicinity south of the Big Grain Field shown on said map southeasterly from the mouth of Silvies River gives the low elevations as 4,089.1, 4,089.2, 4,089.3, 4,089.4, or, in other words, practically identical with the elevations found by Cooper and Dodge in the winter of 1913–14, when the water was 5 feet deep over this area.

With reference to the statements in the Jessup Report on page 76 as to the small effect irrigation has had upon the quantity of water reaching Malheur Lake, and Table No. 16 shown on pages 73, 74, showing the swamp overflow and meadow lands, and the conclusion therefrom that no greater amount of water is diverted on the lands under the present irrigation than were taken up by the swamp lands originally and not to exceed 40 or 50 thousand acre-feet of water now diverted from the lake which formerly went into it, we submit that in the old swamp land conditions, sloughs and channels through the swamps returned the water to the rivers and thence down into the lake as soon as the overflow ceased and the streams receded to their banks; as the swamp lands have been reclaimed and dry lands put into cultivation, ditches have been dug leading the waters from the river upon and through the lands, levees have been created through the entire valley for the purpose of, and in fact, retaining the waters upon the lands until the waters largely disappear through transpiration, evaporation, and percolation. As an illustration of this situation we have the present condition in the middle of April, 1932. During the winter of 1931 and 1932 Harney County has had a heavy snow fall, and the stream flow bids fair to be above normal. There is a large quantity of water being diverted from the main channel of the Silvies River. First the Foley Slough, about seven miles above Burns. Although there is a natural slough the amount of water carried by it is influenced by the Burns Mill Dam below the mouth of said slough. The Hanley Drain Ditch, leading from the Burns Mill Dam about 1½ miles north of the city, and covering large areas of land east of the main channel of Silvies River, which would not be covered if it were not for this ditch and the aforementioned mill dam. This water has not reached the lake at the present time (mid April, 1932) and probably most of it never will reach the lake. The next large diversion is the Hanley 21 ditch taken out of the east fork of Silvies River in Section 21, T. 23 S., R. 31 E., which carries a large amount.

of water, enough to irrigate several sections of meadow land. This ditch is full at the present time, and only a small per cent of the water diverted by it ever reaches Silvies River again or Malheur Lake. Another point of large diversion is P. L. S. Company's Wright's Point Canal, which irrigates the southwest portion of the Red "S" Field, and has been carrying a full head of water for some time. Then there are large levees in the east fork of Silvies River about two miles west of the present town of Lawen, which, up to the present time have prevented any water reaching the lands immediately south of Lawen. Up to April 20th no water had reached Malheur Lake from the Silvies River watershed. In fact no water had passed under the Herman Ruh Bridge, although large areas tributary to the Silvies River are irrigated and have been for a period of from two to three weeks. This covers only a few of the principal diversions in the Silvies River watershed in Harney Valley. Numerous other diversions are made on Silvies River and on every tributary from Harney Valley extending up the stream to the headwaters. This same general condition exists in the Blitzen and all its tributaries.

In the days of the early white settlers in the vicinity of Malheur Lake the industry of the country consisted almost entirely of livestock, especally cattle and horses. By far the greater part of the feed for this livestock was grazed from the natural range. In the past 30 years the quantity of grazing on the natural range has been steadily decreasing and adequate feed for livestock became an acute problem. In order to supplement the range as much as possible decided efforts have been made to increase the hay land area to many thousands of acres more than the natural swamp hay land represented, and in accomplishing this, large quantities of water have been diverted on to lands at a higher elevation than would ever have flooded by natural flow.

It is therefore, illogical to assume that all of the diversions made since the settlement along these streams has not very materially reduced the flow into Malheur Lake.

The Jessup Report shows, among other things:

1. A long, almost unbroken record of "Elevations of Water Surface in Great Salt Lake 1851–1930." Jessup Report, Fig. 7.

2. A very fragmentary record of conditions in Malheur Lake.

3. Detailed study of tree-ring growth near Malheur Lake, covering a long period of time, 1735–1930.

The two regions are similar in many respects. A tree-ring study near Great Salt Lake would have established the relation between tree growth and lake water, and served as a "key" for decoding the history of Malheur Lake. Without this "key" the record of tree rings near Malheur Lake does not lend itself to conclusive interpretation.

STATE OF OREGON,
County of Marion, ss.

I, R. D. Cooper, and I, M. V. Dodge, do hereby certify that the foregoing report is a true and correct statement by us of the facts as we believe them to be, based upon our observance and knowledge of the lake involved in this suit as hereinabove set forth, and request that the same be made a part of the record as a part of our sworn testimony, and certify that the statements therein contained would be our sworn testimony, and we would so testify upon the trial of said cause to the same effect as if we were upon the witness stand and the testimony was taken upon interrogatories and answers in the ordinary manner.

(Signed) R. D. COOPER.
(Signed) M. V. DODGE.

4. Supplemental report by Mr. Jessup in answer to comments of Messrs. Cooper and Dodge upon his Report.

It is further stipulated between Plaintiff and Defendant that instead of taking the testimony of L. T. Jessup by questions and answers in reference to his answer to the statement of Messrs. Cooper and Dodge commenting upon his Report, that the following supplemental Report upon said statement of Messrs. Cooper and Dodge, be received in evidence, and that such witness will testify as shown in such supplemental Report. The same shall be received to all intents and purposes as if given under oath.

United States Department of Agriculture

Bureau of Agricultural Engineering

A Supplemental Report on Malheur and Harney Lakes by L. T. Jessup, Associate Drainage Engineer, in Answer to a Report by Cooper and Dodge

The original report, "Malheur and Harney Lakes," by L. T. Jessup, is Plaintiff's Exhibits No. 52 and No. 53 in the case United States vs. Oregon.

Tree Rings and Climate

The Cooper and Dodge Report notes the agreement between the tree-ring data and lake stages for 1889 and 1930 and reaches the conclusion that Malheur Lake has been dry ten times during the past two centuries, or an average of about one year in twenty. The writer would not have used their straight line theory but in a general way agrees with that conclusion. The tree-ring data also indicate that the lake has been quite low very frequently, and that it probably was quite low in 1858 and 1859. Further the data indicate that some of these very low stages were of long duration and that

at least two of them were more or less continuous for periods extending over a quarter of a century or more.

In the closure of their report Cooper and Dodge seem to think that a tree-ring study should have bec made in the Great Salt Lake Basin in order to find a "key" for decoding the history of Malheur Lake. The writer suggests that since the tree-ring data corresponds fairly well with historical and other records pertaining to Malheur Lake, that no additional "key" is necessary.

Evaporation

The following sentence appears in the Cooper and Dodge Report: "In this computation, transpiration has been assumed to have balanced precipitation in accordance with Jessup. (P. 78.)"

Surely this must be the result of a misunderstanding since the original Jessup Report contained no such assumption. The original report contains an estimate of 4 feet for average annual net loss from evaporation and transpiration. The estimate was derived as follows:

Average evaporation, Class A pan, period seven months, Harney Branch Experiment Station	43 inches
Estimated average for full year	4.00 feet
Average annual evaporation from large, open, shallow body of water, estimated at	3.60 feet
Average annual transpiration and evaporation from large tule area estimated at (150% of evaporation rate. Mostly transpiration)	5.40 feet
Fifty per cent of Malheur Lake assumed to be tule area and the remainder open water.	
Average total loss from entire area	4.50 feet
Average precipitation at Harney Branch Experiment Station for period covered by evaporation records	0.65 feet
Average annual net loss for evaporation and transpiration	3.85 feet

The figure 3.85 feet is a very rough estimate and for convenience was called 4 feet. The tule area expressed as a percentage of the total area no doubt varies with lake stage and other factors. Since the net loss is an estimated average, the actual loss for any particular year may vary from this figure by a considerable amount in accordance with variations in evaporation, transpiration, precipitation, and ratio of tule area to total area.

Elevation of Malheur Lake, February, 1914

The Cooper and Dodge Report claims that the elevation of Lake Malheur was 4,094.3 during February, 1914. The writer did not have knowledge of this figure at the time of writing the report. Also it was his understanding that surveys made during 1914 had not been closed or checked and that such work was done when the lake was frozen and the surface was assumed to be level.

The State Report, "Malheur Lake Survey, 1922," gives a list of elevations at the Narrows and of the lake as determined by Cooper

and Dodge. This list does not give any elevation of the lake on February, 1914, but does give one for the Narrows as 4,093.78 (U. S. Datum). This list of elevations shows a difference of 0.3 of a foot between the Narrows and the lake on May 4, 1914. If this much difference obtained in February the elevation of the lake would have been 4,094.08 based on their elevation at the Narrows. If the channel at the Narrows were choked with ice the difference might have been even less.

No February record for other years shows such a high elevation as 4,094.3. No record for March of other years is this high. No record for the first half of April of other years shows an elevation this high except for 1904—a year of extremely high water.

The elevation of Malheur Lake for February, 1914, is given in a joint report by the United States Reclamation Service and the State of Oregon and published by the latter. It is entitled "Harney and Silver Creek Projects," February, 1916. The following sentence appears on page 76: "A condensed profile of a survey by Cooper and Dodge for such a canal is shown by Sheet No. 40." This sheet which follows page 76 gives the elevation of the water surface of Malheur Lake on February, 1914, as 4,093.5.

The Cooper and Dodge Map (Defendant's Exhibit No. X–6) gives 12 points with zero depth indicating the boundary of the water surface and when referred to the Government Map (Plaintiff's Exhibit No. 3), it is found that the elevations of these points vary from about 4,091 to 4,096, with the average at about 4,093.4.

If a line be sketched through these points on the Cooper and Dodge Map representing the boundary of the lake it encloses an area of about 43,000 acres. Referring this to the curve for Malheur Lake, Figure 14 of the Jessup Report, a water surface having an area of 43,000 acres would have an elevation of 4,092.9. Such a boundary line would fall well within the Neal meander line, with the exception of portions along the east and southeastern part of the lake and at one point on the northern boundary. This would indicate that the average elevation of the lake as shown on the Cooper and Dodge Map was not above and probably below 4,093.5.

Actual gage readings show that the lake was falling during August, 1913, and that the elevation at the Narrows was 4,093.89 on August 28th of that year. Surely it must have continued to fall for some considerable time and it hardly seems probable that it would have shown much rise during the following winter and up to February, 1914, when the lake was covered with thick ice.

The above data are somewhat conflicting but seem to point to a water surface elevation of not more than and probably less than 4,093.5.

Relation of Lake Stage to Estimated Inflow

The Cooper and Dodge Report presents a series of computations which seem to reach the conclusion that one of the estimates for lake inflow contained in the Jessup Report is in error. Such estimates,

of course, may be subject to some error when considering the meager data available. This might be particularly true of the estimate for the period October, 1912, to September, 1913, inclusive, since it was based to some extent on discharge figures which were estimates.

The Cooper and Dodge computation for 1913 assumes monthly rates of inflow and a total inflow of 105,000 acre-feet for the period April, 1913, to February, 1914. The Jessup Report estimates the inflow at 105,000 acre-feet for the period October, 1912, to September, 1913, inclusive, and at 152,000 acre-feet for the period October, 1913, to September, 1914, inclusive. The Jessup Report contains no monthly estimates of inflow nor does it contain any estimate for the period April, 1913, to February, 1914.

They assume that the surface of the lake is 0.5 of a foot higher than the water surface at the Narrows. There may or may not have been some difference in elevation but no figure is given in the Jessup Report for the period in question.

They assume that evaporation and precipitation were normal and that transpiration balanced precipitation for 1913. No such assumptions appear in the Jessup Report nor does it give a monthly rate for net evaporation and transpiration.

In their computation for 1913 *all* of the assumptions used were made by Cooper and Dodge and it appears that the result of the computation indicates that one or more of their own assumptions, as outlined above, are erroneous or that their elevation for February, 1914, is too high.

Merely for the purpose of the following computation assume that the lake reached an elevation about or nearly as high as that claimed by them for February. To have reached that elevation it must have been rising prior to that date since it was falling in August, 1913, and must have continued to do so until it was well below elevation 4,094. Assume that the lake was about at the same elevation on April 1, 1913, as in February, 1914. Assume that Mud Lake during the entire period averaged about one foot less in elevation than Malheur Lake. Allowing for the slope west from Graves Island to Mud Lake and for the probability that Malheur Lake must have been well below elevation 4,094 during the latter part of 1913, the average water surface area during the whole period may be taken as approximately 56,500 acres. In addition to the above also accept for the moment, the Cooper and Dodge estimate of 105,000 acre-feet for inflow.

In making such computations as follows it is more accurate to use monthly intervals if the data are available for doing so, but since they are not and since assumptions must be made for each computation it is just as well to make them cover the whole period in question:

$$\frac{105,000}{56,500} = 1.86 \text{ ft. Net evaporation and transpiration.}$$

$$\text{Precipitation} = \frac{1.14 \text{ ft.}}{3.00 \text{ ft.}} \begin{matrix} \text{(Burns.)} \\ \text{Total evaporation and transpiration.} \end{matrix}$$

Estimated average figure for total annual evaporation and transpiration (not net), given in previous paragraph as 4.50 feet.

Estimated average figure for total evaporation and transpiration for the 10-month period is 4.28 feet.

$$\frac{3.00}{4.28} \times 100 = 70 \text{ per cent.}$$

This indicates that on the basis of the above assumptions the total evaporation and transpiration loss for the period considered was 70 per cent of the figure estimated to represent the average. This is a rather low percentage but not an impossible one.

Had it been assumed that the elevation of the lake was somewhat lower in February, or had Cooper and Dodge assumed that the inflow was somewhat greater, the resulting figure for evaporation and transpiration would have approached nearer to the estimated average.

Cooper and Dodge might well have added several thousand acre-feet to their estimated inflow particularly since the lake must have risen during the winter if it reached the elevation claimed by them for February, 1914, and also because the discharge of the Silvies and Blitzen Rivers, as estimated by Henshaw, seems to have shown a little increase during January, 1914.

However, the estimate for inflow could not be increased by a very large figure because of other factors. It is claimed that far over 100,000 acres are irrigated in the Harney and Blitzen valleys and that 2 acre-feet per acre or more is the required consumptive use of water for crop production. The inflow into these two valleys for the stream year 1912–1913 was estimated by Henshaw at 271,000 acre-feet. Assuming that 105,000 acre-feet reached the lake would leave 166,000 acre-feet for irrigation. For 100,000 acres this would give a consumptive use of 1.66 acre-feet per acre. Obviously the Cooper and Dodge estimate of 105,000 acre-feet inflow for the period April to February could not be greatly increased. The same observation holds true for the Jessup estimate of 105,000 acre-feet for the period October, 1912, to September, 1913, inclusive. If a greater part of the discharge of these rivers actually reached the lake it would then be necessary to conclude that the irrigated area is far less than claimed.

All of the above brings out the following facts with reference to the Cooper and Dodge computation:

1. That their assumption that transpiration balances precipitation is erroneous.

2. That they improperly assumed that an average figure for evaporation and transpiration can be applied with accurate results to other figures which are not averages such as, precipitation, estimates of inflow, and lake stage.

3. That either one or more of their own assumptions with respect to net rate of evaporation and transpiration, amount of inflow, etc., are in error or that their elevation of 4,094.3 for February, 1914, is too high.

Relation of Tule Growth to Lake Depth

The Cooper and Dodge Report concludes that tule growth depends upon the nature of the soil. The writer made a careful examination

of the soil in portions of Malheur Lake and has a general knowledge of the soil of the entire area. The writer is also familiar with the soil of Lower Klamath Lake and other places mentioned with reference to tule growth.

It is a well-known fact that this plant does best in peat—a formation of its own making. However, it does not make any difference since the writer sought for all data that could be found relative to maximum height of tule growth under any and all kinds of conditions and the conclusion is presented in the original report.

Cooper and Dodge seem to reach the conclusion that the peat areas have not settled after the water was removed. They reach this conclusion by the process of finding a certain spot on their map where the elevations correspond closely with that of the Government Map. A comparison of these two maps does not show close agreement throughout the area and in numerous places there appears to be differences amounting to several feet with respect to elevation. Moreover, the method necessary under the conditions which the Cooper and Dodge Survey was made does not lend itself to great accuracy. This is not intended as a criticism of the Cooper and Dodge Survey. No doubt their map had a degree of accuracy sufficient for its original purpose. A conclusion that peat does not settle to some extent when drained is contrary to the writer's experience and at variance with scientific literature on the subject.

Irrigation, Past and Present

The writer is aware of the irrigation works listed in the Cooper and Dodge Report and in a general way reference was made to them in the original report. The writer is also aware of the sloughs and depressions which now contain small dams and levees but which in their natural state were choked with débris and tule growth.

The only data available indicate very clearly that the area claimed to be irrigated to-day is not greatly different from the area that used to be naturally flooded.

Probably not more than 10 per cent of the area claimed to be irrigated is cultivated. When this area was first settled and before it was called "irrigated" it produced meadow for grazing and wild hay. Most of the area is still used for the same purpose. It is not highly probable that the variety of plants grown required less water for their growth in early days than they do now.

The Jessup estimate that irrigation has decreased the inflow to the lake by 40,000 or 50,000 acre-feet seems to be very liberally high in view of the data.

Closure

The writer is all too well aware of the difficulties connected with an attempt to create what Cooper and Dodge term a "synthetic lake." He appreciates their statement that it is not assumed that the data in the Jessup Report were expected to give the exact status of Malheur Lake for any particular day.

The data resulting from gage readings extending over a period of about 20 years and presented as water surface elevations in tables of the report and graphically in Figure 16 give a fairly accurate picture of the lake for that period. This graph and the great majority of the figures upon which it is based do not depend on estimates nor assumptions by Jessup or anyone else. These data show a shallow body of water varying considerably in depth and widely in area both with seasonal and with oscillations in climatic conditions of longer interval.

Tree ring data indicate that average climatic conditions for the past twenty years is also approximately the normal for the past 200 years. Also the tree ring data vary from the normal quite closely with variations of precipitation from the normal and such actual history of Malheur Lake as is available show that when the precipitation is continuously below normal for a few years the lake reaches a low stage.

If a graph were available showing the exact elevations of the lake for the past 200 years it would in a general way show about the same conditions as are depicted in Figure 16. Certainly it would not show each twenty-year period to be similar but on it would be found high peaks such as occurred in 1904; there would be long low periods such as has existed in recent years and at times a dry lake such as existed in 1931. Its maximum, minimum, and average elevation would not be materially different than that for the past twenty years. The plant growth and peat development, the topographic forms existing on the lake bed and the tree ring data all point rather definitely to such conclusions.

L. T. JESSUP.

JUNE 1, 1932.

X. DEFINITIONS

EVIDENCE RELATING TO

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Acre.—I do not know the derivation of the word "acre" as used in lineal measurements, but it is a term that is in common usage in

Louisiana in land descriptions; and also apparently in northeast Canada among the French Canadian people as a unit of measurement, and its length is approximately 209 feet.—Chester W. Pecore. (R. 135.)

Buck rake.—A buck rake is a big machine with a long rake; teeth in it, and they hitch the horses on the side and load from a half to a ton of hay and drag it to the stack; then it is put on a net, and they have a four or six horse team to pull it up on a slide. It is used in connection with stacking hay.—Phillip Gordon Smith. (R. 1745.)

Greasewood.—Greasewood will stay in the water preserved forever. William Hanley. (R. 1372.)

Islands, floating tule.—There are these floating tule islands (in Malheur Lake); we call them floating tule islands; tule growth; the roots form a sort of surface and they grow up and die down each season; and that forms a sort of mat surface on these tule islands, where the birds nest in great numbers. (R. 2300.)

Those floating tule islands have a fixed location. They are rooted in, but as I say, when you walk over them the matted surface kind of goes up and down where fixed. The way (they are) formed (is this): A little tule growth blows loose and goes over and begins to root and gradually spreads out.

The tule that I referred to grows in shallow water. The tule, or rush, has another name, but I do not recall it, but it (is) quite a long stick-like thing that goes up, and then it is pithy in the middle; regular sort of swamp growth. I do not mean cat-tail, that is different. A cat-tail is flat. It is a plant (the tule) that is common all through in these marshy areas; only grows in shallow water. Tule is the common name; I don't recall the other name.—William L. Finley. (R. 2301.)

Major domo.—That is the Spanish word for "Boss."—Lee Minis Caldwell. (R. 151–152.)

Ordinary high-water mark.—Mr. BLACKMAR. Q. What do the words "ordinary high-water mark" suggest to you?

A. That means when the lake is up high.—Thomas T. Dunn. (R. 1842.)

Sagebrush.—Sagebrush grows on about the best soil there is here, but I do not know what kind of soil it is.—Lee Minis Caldwell. (R. 148.)

There are two kinds of sage, one called the water sage and the other yellow sage. The water sage will grow where it overflows, but the yellow will not. One kind is a little, small fellow, but the yellow sage has a big body.—John Gardner. (R. 271.)

Sagebrush is designated by some into two different kinds, yellow sage and water sage. The yellow sage has heavier stocks than has the water sage.—Will Y. King. (R. 380.)

Salt grass.—Salt grass grows on alkali places. You hardly ever see any salt grass grow where there is much water.—Lee Minis Caldwell. (R. 147.)

With reference to the high water of the lake, my experience with salt grass is that it grows pretty near anywhere that the water doesn't stand on it continually. I have seen it not exactly above the high water. I have seen it when the high water was over it, and it would not kill it.—Paul Ware on cross-examination. (R. 1332.)

Salt grass is really kind of a foundation for all those coarse grasses. The salt grass has a very heavy, strong rooting system. It is a very substantial grass and can take pretty near any kind of punishment and really will grow into a hay grass. It is like foxtail which will come out of salt grass. (R. 1355.) Salt grass seems to love this native soil; it does not seem to want it too bad; it can get a little too strong for it, but a soil that is a little bit off color, that is fit for salt grass. There are a good many places in this country away from the lakes where you can find salt grass. In places where there is water, and kind of a little mineralized raised place that has moisture that runs between the hardpan and the top, the salt grass will come; it isn't a bad grass; it is a little rough and a little coarse, but it can be improved; it has a wonderful rooting system, and the grass people are talking about the development of it as forage grass.—William Hanley. (R. 1356.)

I am familiar with salt grass, which is a grass common in this community; I have fed stock on that grass from time to time; my experience is that it seems to grow principally along on alkali soil; I could not say that it requires considerable moisture. (R. 1508.)

I have had occasion to observe some the effect of flood water upon salt grass. (R. 1508.) My experience has been that I have seen the water out over it, but as far as killing it is concerned, it did not seem to do it unless it would stand on there for quite a while. By "quite a while" I mean, I could not say just how long, but this bank we speak of at Windy Point at one time there was no salt grass on it at all, and since these dry years and the lake has gone dead, there is salt grass clear across to Pelican Island there now.—Orin Eugene Thompson. (R. 1509.)

This salt grass is common to our country around Burns. I have a ranch out here, and I am greatly troubled with it on all our second and third soils carrying the minerals; and that was a condition on the east side, not only along the border, but clear up to Crane and Harney; and all our second-class soils grew this class of grass.

The salt grass in the southeastern and eastern parts of the (Malheur) lake did not depend upon the lapping of waters. It does not depend upon the water level. It grows away above the water level (R. 1639), but where it (the water) stays any length of time it kills it out.—Dr. Llewellyn Eugene Hibbard. (R. 1640.)

Salt grass is known pretty well throughout this county. Its growth is not necessarily confined to the lake area; it is grown right here in town; I am bothered with it in my yard in the flower garden; we have lots of trouble with it.

As a rule salt grass grows in pretty poor soil, but if it gets started it will grow in a yard or anywhere; its roots are all full

of knots; there are sections all along the roots, and it is hard to get rid of it.—George Sizemore. (R. 1651.)

I have had occasion to observe how salt grass stands the water. Water upon salt grass makes it better (R. 1691); salt grass grows outside the water, but when the water comes up and irrigates it, floods it a little, after a few days it makes it better. If you flood salt grass and keep it under the water long enough it will kill it, but I have found a little water is a good thing for it.

Mr. BLACKMAR. Q. These other witnesses have testified that salt grass grows on an alkali soil. Has that been your experience with it?

A. Salt grass will grow anywheres if it will get moisture enough.—George Marshall. (R. 1692.)

Salt grass grows in alkali and ridges. I never saw salt grass growing down in those sloughs in wet years. It is on ridges and the like of that.—Ralph Catterson. (R. 1708.)

My experience with salt grass is that if the water gets up over the salt grass, and it does not cover it entirely, it makes it better and it grows better, but if it covers it up for two or three months, something like that, it would kill it.—James A. Turner. (R. 1725.)

I think that when the salt grass is not covered with water all over it it makes better hay.—Charles A. Spurlock. (R. 1765–1766.)

Salt grass grew just above the water, and kind of along on the edge of the water. (R. 1832.)

Salt grass would not grow one summer if the water was covered over it entirely all the time.—Thomas T. Dunn. (R. 1844.)

The salt grass that has been spoken of here is seen a good deal around on the high ridges; there was some salt grass on my father's place. There is salt grass over a good part of this county on the high ridges; salt grass is more or less over the entire part of the county that I have been where there was water—not too much water. Wherever there is salt grass it is an indication of alkali soil.—Clarence W. Drinkwater. (R. 1879.)

There is not a rim of salt grass around my deeded lands; it just looks to me like everywhere a little salt grass. I have seen mighty good salt grass that the water would run over, the (Blitzen) river water run over; then run off, and when it dried it made pretty good salt grass.

Mr. LILJEQVIST. Q. Isn't it a fact there was a rim of salt grass around the lake, a well defined rim?

A. No; it didn't seem that way to me; it seems to me that there is lots of salt grass, there is no doubt about that, but I can not say that there is any particular line of it. It is out in the middle of the lake; all over those high places is salt (R. 2088) grass; not all over, but in some places.

The salt grass grows along the water's edge as a rule; where the water floods it, it does, and after the water goes off of it. In a

measure the water has to go on it and off of it before you find salt grass.—Alfred L. Marshall. (R. 2089.)

The salt grass grows on the higher ground, but then it will grow in the water if it does not get too high or goes over it before it gets started.

Where the water floods the land every year the salt grass grows; if the water goes up over those ridges, up over this grass it makes quite a great deal more growth. Generally it is a short grass, but I have seen it a foot high; and sometimes 15 inches high where the water would come up there.—John Emery Graves. (R. 2110.)

It has been my experience with salt grass that it grows in alkali soil.—Henry Otley. (R. 2214.)

Salt grass will grow on most any of that soil if the water is not over it; the water kills off the salt grass if it stands on it too long; I do not know how many seasons it would take to kill off the salt grass; it will not kill it in one season, unless it stands too deep over it; if it gets too deep it might kill it.—Hadden Elliott. (R.2219.)

Mr. LILJEQVIST. Q. Now, Mr. Dodge, in your work around the lake, did you notice anything about a change of vegetation where it was unaffected by the overflow of the Blitzen and Silvies (Rivers) above the water line of the (Malheur) lake, or was there a line of the lake indicated by vegetation? If so, what?

A. Well, I would state it this way, if I may, Mr. Liljeqvist: That in my observation salt grass grows because of an alkaline condition of the soil, if there is water enough present to grow it; and for that reason, if the body of water for some time, or some term of years, backs up to about the same (R. 2477) point, as it recedes it will naturally deposit salts if they are in solution; if it backs up closely to this point for a term of years it is very likely salt grass will grow up and form a border at that point. There are places on the (Malheur) lake where it is quite pronounced. There are other places where it is very hard to follow.

Q. And in what places is it pronounced?

A. It is pronounced along the east shore of the lake. When I first knew the lake it was more pronounced than it is now. There are other places in the northwesterly part of the lake that it is apparent, but not as well defined as in the easterly part of the lake.—Mott V. Dodge. (R. 2478.)

Sugar grass.—The sugar grass grows all the way from four to five feet high where the soil is wet, around among the tules. (R. 147.) It does not grow in alkali soil.—Lee Minis Caldwell. (R. 148.)

Sugar grass does not grow on higher ground than salt grass.—Thomas J. Vickers. (R. 248.)

Sugar grass requires water, but it isn't necessary to cover it over in water, put it under the water, flood it, but to subirrigate it makes good grass.—George Marshall. (R. 1704.)

Mr. BLACKMAR. Q. Down in the lower parts of these places in the lake, one might say down in the sloughs, there is where you get the sugar grass?

A. Well, no, not exactly, the sugar grass in the lower, and where the water stood for a longer period was tules.

Q. Yes.

As I recall it, there was an intermediate sugar grass (R. 1879) that would grow next to the higher ground.

Mr. BLACKMAR. Q. That is what I mean, on the well-watered part and where the soil was better.

A. Yes.

Q. As you understood it, the sugar grass does not grow on the alkali soil, does it?

A. It grows on a ground that is well watered, and it stands quite a lot of water.—Clarence W. Drinkwater. (R. 1880.)

Surface water.—Surface water is water that flows above the surface of the ground.

Mr. BLACKMAR. Q. Is the term "surface water" confined to the precipitation, or does it also include this water that spreads out in sort of a fan shape?

A. If there had been any precipitation on the area irrigated by the Silvies River below Burns it, of course, would have been shown in the measurements made near the northern boundary of Malheur Lake. The precipitation, however, during the irrigation season would have made very small difference. Louie T. Jessup. (R. 2434.)

Swamping cattle.—When snow fell in the valleys and mountains, the cattle would come down to the lakes across the ice and enter the tule and grass areas to feed and shelter themselves from the wind. When the ice began to break up, which happened lots of times in February, it was necessary to drive them out of those areas on to solid ground, and to do this, it was necessary to hold the cattle up until the ice became all broken up before you could turn them loose. Later, when it would freeze up again, the cattle would return to those areas in the lakes. That is what we call swamping cattle. (R. 138–139.) The tules in those days would reach a height of four or five feet or higher above the ice. (R. 139.) They would be three to five feet high.—Lee Minis Caldwell. (R. 163.)

Swamping cattle means going down into these islands and places where the cattle have drifted in, and get them out of the water and locate them on higher ground.—William Hanley. (R. 1360.)

Transpiration.—Transpiration is the water used by plants which is passed by them into the air. (R. 2464.) That term does not include the loss at all of the water in which the plants are standing.—Louie T. Jessup. (R. 2464–2465.)

Western half of Malheur Lake.—SPECIAL MASTER. Q. Can you give an easterly boundary line (R. 1998) to what you call the western part of Malheur Lake?

A. Westerly I would say from the Narrows to the mouth of the Silvies River, that is what I had in mind.

SPECIAL MASTER. I mean a northerly and southerly line to cross the lake, which would be from the west fork of the Silvies.

A. Yes.

Q. And that would be what?

A. To the mouth of the Blitzen River, roughly speaking.

Mr. BLACKMAR. To locate it a little more definitely——

SPECIAL MASTER. That is sufficient.

Mr. BLACKMAR. Q. On the south side, near the Sodhouse Spring?

A. Yes.

Mr. BLACKMAR. Q. I think that coincides with what I had in mind.

Mr. LILJEQVIST. I would like to put in the record, to clarify it, that wherever I have used the expression "westerly half of the lake," I had that same line in mind.

SPECIAL MASTER. From the west fork of the Silvies to the Sodhouse Spring?

A. I think that is a fair definition.—Stanley G. Jewett. (R. 1999.)

Wire grass.—Wire grass stands quite a bit of water, but water will kill it out, too, if it is on it too long.—Thomas T. Dunn. (R. 1827.)

The wire grass stayed where the water stayed longer (R. 1837) more than salt grass did.—Thomas T. Dunn. (R. 1838.)

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Sodhouse Ranch	1154
Sodhouse Spring	1154
Sodhouse, or Springer's Spring	1154
Springer, Alva, homestead	1154
Springer, Alva, place	1155
Springer, Louis B., homestead	1155
Springer's place	1155
Springer's (Ed) place	1156
Spurlock, Alvin C. and Charles A., house	1156
Spurlock, A. and C., house	1156
Spurlock, Charles A., homestead	1156
Spurlock place	1157
Square Well Field	1157
Stauffer corral	1157
Swan Lake	1158
Swan Lake Field	1158
Taylor Ridge	1159
The "Island"	1159
Thomas, Z. L., place	1159
Thompson, George, place	1159
Thompson, Grant, place	1161
Thompson, Orin Eugene, place	1161
Thompson, Sarah E., place	1161
Tule fire	1161
Tule (peat land) fire	1162
Turner, James A., place	1162
Turner place	1163
Venator, Alphena, properties	1163
Venator, R. K., place	1163
Vickers house	1163
Vickers, Thomas, place	1164
Vickers, Thomas L., place	1164
Vickers, Thomas L., and brother, place	1164
Ware's place	1165
Water well, County (near Windy Point)	1165
Windy Point	1165
Woldenburg, Louis, place	1166
Woodcock, J., place	1166
Wright's Point	1166

Armack place—I had the Armack place.—Alphena Venator. (R. 2322.)

Ausmus, Ben, house.—I formerly had a place right south of where Ben Ausmus has got his place down there (in Malheur Lake), as nearly as I can tell you the description of it. (R. 1720.)

(NOTE: The Ben Ausmus house is about a quarter of a mile south of the south boundary of lot 1, section 28, T. 25 S., R. 32½ E.—Pecore.) (R. 1720.)

My house I would say was a quarter of a mile below where the Ben Ausmus house is located.—James A. Turner. (R. 1720.)

Cross-examination:

Mr. LILJEQVIST. Q. Where is Ausmus' place?

[Mr. Pecore indicates on map.]

Mr. LILJEQVIST. Q. Is that where the Ausmus house now is?

A. No, the Ausmus house is farther north from where I had mine.

Mr. Ausmus had his house about a quarter of a mile north from where I had my house.—James A. Turner. (R. 1729.)

Also referred to by witnesses:

	Vol.	Page
Drinkwater, Clarence W. (R. 1872)	I	28
Farrier, Jesse (R. 1927)	I	329
Heinz, John W. (R. 1943)	I	330
Turner, James A. (R. 1721)	I	342
Turner, James A. (R. 1721–1722)	I	533
Turner, James A. (R. 1719)	I	58

Ausmus, B. C., house.—Mr. BLACKMAR. Let me have the location of that Ausmus house on the map, Mr. Pecore.

Mr. PECORE. You are referring to your house down off the patented lands; the one you have been talking about down in the lake bed?

A. Yes.—Joe Ormand Ausmus. (R. 2128.)

Mr. PECORE. That is designated on this map (Plaintiff's Exhibit 3) as B. C. Ausmus, and it is about a quarter of a mile south of the Neal meander line along the south boundary of section 28, township 25 south, range 32½ east; and we ought to call attention, I think, that over in lot 1, of section 20 of township 25 south, range 32½ east, is another house designated on this map as "J. O. Ausmus," where I think Mr. Ausmus was living when we were in the field, and it should not be confused with the house that he is talking about a mile from there. (R. 2129.)

Ausmus, Joe Ormand, house.—Mr. BLACKMAR. Let me have the location of that Ausmus house on the map, Mr. Pecore.

Mr. PECORE. You are referring to your house down off the patented lands; the one you have been talking about down in the lake bed?

A. Yes. (R. 2128.)

Mr. PECORE. That is designated on this map as B. C. Ausmus, and it is about a quarter of a mile south of the Neal meander line along the south boundary of section 28, township 25 south, range 32½ east; and we ought to call attention, I think, that over in lot 1, of section 20 of township 25 south, range 32½ east, is another house designated on this map as "J. O. Ausmus," where, I think Mr. Ausmus was living when were were in the field, and it should not be confused with the house that he is talking about a mile from there.—Joe Ormand Ausmus. (R. 2129.)

Ausmus J. Ormand (also Ben) grain field.—This particular year we have planted between 1,000 and 1,500 acres of grain, rye, wheat, oats, and barley.

Mr. BLACKMAR. Is that designated on Plaintiff's Exhibit 3?

Mr. PECORE. Yes, sir; but we haven't distinguished between (R. 2129) the Ausmus and the Otley grain, and the Hayes grain, but it is all marked "Grain Field" with an irregular dot around the outer boundaries. We couldn't tell where Mr. Ausmus' grain ended and where Mr. Hayes' commenced.

The place where we have our grain is in a part (R. 2130) of the (Malheur) lake that in a good many seasons has been open water. Tules sprang up there last summer. Long ones.—Joe Ormand Ausmus. (R. 2131.)

Also referred to by witness:

	Vol.	Page
Ausmus, Joe Ormand (R. 2131)	II	619

Ausmus, Joe Ormand (also Ben), place.—I and some other members of my family have a place down there in the (Lake Malheur) Bird Reserve where we have lived continuously since 1904. I think there are about 2,500 acres in the place. There is really more than that now, but we always used about 2,500 acres; but we used more this summer than that. (R. 2127).

Prior to the time I moved on that place it had been occupied by Warren Joergan, from whom I and other members of the family bought the improvements. (R. 2127–2128.) There was a house there on it at that time; some corrals and some outbuildings.

The same place and the same house is the one that has been described (here) as the Turner place—Joe Ormand Ausmus. (R. 2128.)

Also referred to by witnesses:

	Vol.	Page
Alberson, Jesse O. (R. 1276)	I	515
Ausmus, Joe Ormand (R. 2135)	I	230
Ausmus, Joe Ormand (R. 2134–2135)	I	345
Ausmus, Joe Ormand (R. 2130)	II	669
Ausmus, Joe Ormand (R. 2127)	I	11
Culp, Lloyd B. (R. 1849)	II	673
Culp, Lloyd B. (R. 1849)	II	702
Farrier, Jesse (R. 1927)	I	344
Spurlock, Alvin C. (R. 1758)	II	701
Thompson, Grant (R. 726)	I	410
Turner, James A. (R. 1731)	II	687

Bailey, William E., place.—The Sarah E. Thompson place was located down near the Richard A. Smith place on the south side of Mud Lake. (R. 1317.)

I lived on the land owned by Mrs. Sarah E. Thompson down in the northwest corner of Mud Lake; more on the north slope of it; the land was patented to William E. Bailey, and that is the property I lived on.—Paul Ware on cross-examination. (R. 1325–1326.)

Bat house.—Mr. COLLINS. Q. Where is the bat house located?

Mr. LILJEQVIST. It is shown on (the map) Plaintiff's Exhibit No. 3 as a "house" with an elevation of 93 marked right near it, just about 3 inches on the map northwesterly of the southeast projection of Graves' Ridge.—George M. Benson. (R. 2533.)

Bell A ranch.—This ranch is the property of Colonel William Hanley, and is located near Burns, Oregon.—James J. Donegan. (R. 1529.)

Also referred to by witnesses:

	Vol.	Page
Bunyard, James G. (R. 2162)	I	597
Hanley, William (R. 1348)	I	35
Hanley, William (R. 1359)	II	940

Bennett, Jason, house and place.—According to my recollection, Mr. Bennett's house is located a little north of east of Mr. Campbell's place; that is right in the vicinity of Swan Lake.—Grant Thompson. (R. 710.)

Also referred to by witnesses:

	Vol.	Page
Comegys, Fay (R. 1428)	I	201
Bunyard, LeRoy (R. 1153)	I	319
Clark, Joseph William (R. 1027)	I	436
Comegys, Mrs. Fay (R. 1415)	II	981
Dunn, Mrs. Effie L. (R. 850)	II	975
Dunn, William J. (R. 819)	I	417
Thompson, Grant (R. 710)	I	388
Whiting, George E. (R. 568)	I	374

Benson place.—The place that I settled on (in the fall of 1909) was the place that is marked on the map, Plaintiff's Exhibit 3, as "The Benson Cabin" in section 25, T. 26 S., R. 31 E., south of the lake. My cabin was on unsurveyed land inside of the Neal meander line. I have held that cabin ever since.

In the fall of 1909 when I located on the south side of Malheur Lake (R. 2498), myself and Frank Caldwell lived in a tent the first year and trapped. We lived at that time at the same place where the cabin now is located.

I did not build the cabin. I bought it from Tim Crowley in the swamp, in the west part of the (Malheur) lake, and moved it up there. I did not tear it down and rebuild it; I just put it on skids. (R. 2499.)

I do not remember the date I moved the cabin there but it was within a few years after the fall of 1909.—George M. Benson. (R. 2500.)

Also referred to by witness:

	Vol.	Page
Kado, Joseph (R. 2052)	I	611

Benson, George, place.—I know Mr. Benson, the Game Warden (for Lake Malheur Bird Reserve). I knew him before he became Game Warden. (R. 2051.)

He has got a place in the (Lake Malheur) Bird Reserve, right adjoining my place. He had that place before he became Game Warden, and I think he squatted on it. He (Benson) lived on that place and cut hay there.—Joseph Kado. (R. 2052.)

Also referred to by witnesses:

	Vol.	Page
Benson, George M. (R. 2498)	I	13
Benson, George M. (R. 2513)	I	240
Gibson, James Henry (R. 1178)	I	565

Benson's land.—Mr. LILJEQVIST. Q. Is Benson's land on the lake or on the (Blitzen) river where he keeps his boat house?

A. It is on the river.—Joseph Kado. (R. 2050.)

Berry cabin, place.—This Berry cabin, on the Berry place, was, I would say, almost due west of that house, about a mile and a half, as near as I can identify it.—Archie McGowan. (R. 1560.)

That would put it somewhere near the center of the north boundary of section 13, T. 26 S., R. 31 E., north of the lake.—Pecore. (R. 1560.)

Big sagebrush field.—The Big Sagebrush Field is about nine or ten miles long and it is south of the big swamp lands known as the Sodhouse Field toward the P Ranch.—Prim Ortego. (R. 528.)

I am familiar with the Big Sagebrush Field on the Blitzen River.—Maurice Fitzgerald. (R. 1806.)

Also referred to by witness:

	Vol.	Page
Dunn, Mrs. Effie L. (R. 864)	I	493

Bigge, John W., place.—Along in 1910, 1911, or 1912 (R. 1500), I bought some surveyed lands on Malheur Lake, which I owned until this spring, (1931), when I sold them. Mrs. Dr. Denman is the present owner of them. (R. 1499–1500.) They were down just southwest of Saddle Butte; there were two lots there.—John W. Biggs. (R. 1499.)

They are lots 1 and 4, of section 25, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 1500.)

They were a little ways apart; one had only an acre or an acre and a half, and the other had 17 or 18 acres in it.—John W. Biggs. (R. 1500.)

Boathouse, Benson's.—The boathouse is up there on the Spring Branch, which is part of the Blitzen River, where the waters of Springer's Spring flow into it, as shown on Plaintiff's Exhibit 3.—Geo. M. Benson. (R. 2511.)

Borland place.—The Borland place probably joined Haley's on the east, if I remember right. (R. 1861.)

That is the property that is now known as the W. Huffman place and is shown on the map (Plaintiff's Exhibit 3).

It is east of Scott Haley's homestead and the (Malheur) lake; or his settlers claim out there, whatever you would call it.—Pecore; Charles E. Dillman. (R. 1861.)

Bridge at Narrows.—The bridge at the Narrows was built in the fall and winter of 1892–1893.—Simon Lewis. (R. 781.)

There were three bridges at the Narrows. The first and second were the same height; they tore out the first bridge and put in the second one; then they tore out the second one which was getting old and rotted by ants, and put in the third bridge, which was a little lower than the other bridges that had been there.—Cortis E. Elliott. (R. 1061–1062.)

Bunyard, James G., house.—I have not identified in the record the place where Mr. James G. Bunyard is now living; the house is marked "J. Bunyard" (on the map, Plaintiff's Exhibit 3) and it lies between a quarter of a mile and a half a mile slightly west of north of the meander corner of the Neal (meander) line, sections 26 and 27, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 2170.)

The land immediately south of me is owned by the Hill Brothers, and it was formerly owned by Judge Hughet.—James G. Bunyard on cross-examination. (R. 2170.)

Bunyard, James G., place.—I had some patented land located down in that country near the (Lake Malheur) Bird Preserve. (R. 2231–2232.)

They told me the other day that the John Marshall place was now the Hill Brothers place. I sold it to Bunyard, and I haven't been back in that country since I sold it to him. I call it the Bunyard place.

I used some of that land in the (Lake Malheur) Bird Preserve, but I did not have any fence out in the Bird Preserve at all. (R. 2232.)

Cross-examination:

I do not own my lands now; I sold them to James Bunyard. My place is north of Springer's; it is right on the (Neal) meander line. I had a half a mile along the (Neal) meander line.—John Marshall. (R. 2240.)

Bunyard, Jim, place.—Reference is made to the *Comegys, Sidney, place.* (R. 1455.)

Also referred to by witness:

	Vol.	Page
Buchanan, Joseph Warren (R. 925)	I	426

Bunyard Ranch.—In 1904 I and some other members of our family moved on the Griffin tract within the present (Lake Malheur) Bird Reserve (R. 2161) and we were there for two or three days; I imagine it was in about July.

We then moved from there over onto the other side of the (Malheur) lake onto the land my father owned up until he died, which is also in the (Lake Malheur) Bird Reserve. It is known among the settlers as the Bunyard Ranch. It is the place where the Hill boys now live.—James G. Bunyard. (R. 2162.)

(NOTE.—That is shown here (Plaintiff's Exhibit 3) as the Hill Brothers Ranch, and it is just north of the north boundary of lot 5, section 34, T. 26 S., R., 31 E., south of the lake.—Pecore.) (R. 2162.)

Mr. BLACKMAR. Q. Who owned the deeded land which joined you on the south? As I understand it, this place ran right up to the deeded land, didn't it?

A. Well, when we first moved in there John Marshall owned it. (R. 2164.)

Mr. BLACKMAR.—It may be that you and I do not understand each other on this.

Q. I understood the place you moved to down there was also within the Bird Reserve?

A. The place we moved to when we went there was within the Bird Reserve. (R. 2165.)

Q. Was that the place you only stayed three days?

A. No. The place we stayed about three days was over by Haley's. The place we moved onto on the south side of the (Malheur) lake was within the Bird Reserve. That tract is north of the John Marshall tract.

SPECIAL MASTER. I thought he was farther out in the lake, but he was nearer?

A. Yes.

SPECIAL MASTER. He had surveyed lands, did he?

A. Yes. He had deeded lands.—James G. Bunyard. (R. 2165.)

Cross-examination:

With reference to when we went on that land and asserted claims to it, I think my father put up hay on that place along about 1906; he has had it ever since, and it is fenced; I do not know just exactly the number of acres in it, but I think it is around seven or eight hundred acres.—James G. Bunyard. (R. 2169.)

(NOTE.—I have not identified in the record the place where Mr. James G. Bunyard is now living; the house is marked "J. Bunyard" (on the map, Plaintiff's Exhibit 3) and it lies between a quarter of a mile and a half a mile slightly west of north of the meander corner of the Neal (meander) line, sections 26 and 27, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 2170.)

The land immediately south of me is owned by the Hill Brothers, and it was formerly owned by Judge Hughet.—James G. Bunyard. (R. 2170.)

Caldwell, Myrtle, place.—See *Haines, Myrtle, place.*—Pecore; Grant Thompson. (R. 702–703.)

Also referred to by witness:

	Vol.	Page
Reinemann, A. A. (R. 1666)	I	530

Caldwell, Myrtle, properties.—As I understand it, Mrs. Caldwell has several places down there, Mr. Liljeqvist. The house in which she now lives is in lot 2, of section 33, township 26 south, range 31 east, south of the lake. She has another house in the northwest quarter of the northeast quarter of section 32, township 26 south, range 31 east, south of the lake, and she has an interest in township 26 south, range 33 east, I believe.—Pecore.

I used to have a place down there right straight north of the old Hughet place; it is now known as the Hill boys' place. I took possession of that property I think 25 years ago last February (1931), and I had charge of that property until the summer of 1918.—Mrs. Myrtle Caldwell. (R. 2292.)

Caldwell, Old Jim, homestead.—The Old Jim Caldwell homestead is practically in the center of section 34, T. 26 S., R. 31 E., south of the lake (Malheur).—Pecore; William J. Dunn. (R. 817.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Dunn, William J. (R. 824)	I	189	Dunn, William J. (R. 826)	II	651
Dunn, William J. (R. 826)	I	418	Dunn, William J. (R. 826)	II	725

Caldwell, Pete, house and place.—Reference is made to the *Comegys, Sidney, place.* (R. 1455.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Comegys, Sidney (R. 1455)	I	204	Smyth, Darius Hynson (R471)	II	935
Springer, Alva (R. 2024)	II	739			

Campbell Island, Red.—My place was east of Scott Haley's place, Red Campbell Island. He was a little farther east than where we crossed straight there from my place, we struck the west end of the Red Campbell Island. He was a little farther east than where we cut hay.—Charles Sumner Johnson. (R. 1253.)

Campbell, W. A. (Red), Island.—Mr. LILJEQVIST. Q. Now, you said you went out there one time onto an island. The Red Campbell Island, did you say?

A. Yes.

It is north of the Reed place, but I do not know the exact distance.

Mr. LILJEQVIST. Have you any way of determining that distance, the Red Campbell Island, Mr. Pecore?

(Mr. Pecore indicates on map.)

Mr. LILJEQVIST. Mr. Pecore identifies the W. A. Campbell place. The house is on it now.

SPECIAL MASTER. That is what is called Red Campbell Island.

Mr. LILJEQVIST. That is about two miles northwesterly (R. 1288) of the Reed place?

A. Something like that.—Edward Anderson, on cross-examination. (R. 1289.)

Also referred to by witness:

	Vol.	Page
Johnson, Charles Sumner (R. 1249)	I	321
Johnson, Charles Sumner (R. 1259)	I	322
Johnson, Charles Sumner (R. 1254)	I	342

Campbell, W. A. (Red), place.—I have a place that I call mine down there within the (Lake Malheur) Bird Reserve, and within the (Neal) meander line.

I moved onto that place in 1893. There was a house already there and I got the house. I have no family. I did not build any house there, it was there when I went there. (R. 1970.)

I was told that before I went there, the place was supposed to be that of a daughter of Cap. Waters who built the house. Nobody was living in the house at the time I moved in there.—W. A. Campbell. (R. 1971.)

The Campbell place is situated about five inches on the map, Plaintiff's Exhibit No. 3, south of the Neal meander corner of sections 8–7, T. 26 S., R. 32 E., north of the lake.—Pecore. (R. 277.)

Mr. Campbell's house is about an inch and a half on the map, Plaintiff's Exhibit No. 3, almost due west of the Scott Haley place.—Pecore. (R. 710.)

Mr. PECORE. Mr. Campbell's place is shown on this map (Plaintiff's Exhibit 3), as "Campbell," and it is about a mile south of the northeast corner of section 17, T. 26 S., R. 32 E.—Wm. Henry McKenzie. (R. 2150.)

Also referred to by witnesses:

	Vol.	Page
Anderson, Edward (R. 1284)	I	454
Anderson, Edward (R. 1288)	I	323
Buchanan, Joseph Warren (R. 922)	I	425
Buchanan, Joseph Warren (R. 930)	II	652
Buchanan, Joseph Warren (R. 930)	II	652
Dunn, William J. (R. 819)	I	417
Dunn, Thomas T. (R. 1827)	I	541
Gardner, John (R. 267)	I	353
Gardner, John (R. 274)	I	399
Griffin, Mrs. Mary (R. 1933)	I	610
Hibbard, Dr. Llewellyn Eugene (R. 1610)	I	344
Hibbard, Dr. Llewellyn Eugene (R. 1608)	I	578
Hughet, Rubin T. (R. 2184)	I	476
Jenkins, John R. (R. 1815)	I	465
McGowan, Archie (R. 1552)	I	572
Parker, Carlton Emery (R. 777)	I	415

Cane Island (Malheur Lake).—Up there east of Cole Island, and south of the Otley homestead there is an island in there called Cane Island. There are several little islands in there, but I do not know the names of them. There is Cole Island, Pelican Island, and Cane Island. I remember those islands very well.

Mr. BLACKMAR. Q. Did those islands which I have referred to in here south of the Otley homestead and the Catterson homestead, did they have the appearance of being permanent islands, the ones to which I have referred?

A. Yes, they were permanent islands, those little places; they were small, those places were. Pelican Island was the largest.

Q. And Cole Island the next?

A. Cole Island the next; and Cane Island.—George S. Sizemore. (R. 1649.)

Pelican Island and Cane Island were about the only islands I knew by name. Cane Island is west of Pelican Island. It would be kind of hard now for me to give you the distance Cane Island is west of Pelican Island; it has been a long time since I was there, and I would hate to make a mistake. We used to run across there in a boat, and it used to make a day's hunt; we could go out from Nine Mine Slough and across there and hunt. One night we had bad luck, and got in late; we got lost out there and we had trouble finding the island. (R. 1959.)

I do not think there was any greasewood scarcely on Cane Island; there was this cane, and that was how it got its name, I suppose.

I do not think that I have seen other islands in that part of the lake other than Pelican Island that had greasewood on them. (R. 1960.)

Cross-examination:

Cane Island was quite an island. There was more vegetation on it than there was on the other islands. Once in a while you would find stock out on that island. The vegetation on it consisted of salt grass and mostly cane. I do not know whether anyone settled or farmed on that island later on.—John G. Darsey. (R. 1963.)

There is one island that I was on northwest of Cole Island, which I was told they called Cane Island. I remember it very vividly with greasewood and salt grass on it. At the time of my visit, there was a large colony of two species of gulls nesting there.—Stanley G. Jewett. (R. 1997.)

Mr. LILJEQVIST. Q. Now, with reference to this Cane Island. I would like to get that identified, and see if it has blown away, or been washed away, or what has happened to it; I can't find out much about it; I don't see it on this map. Can you locate it on this map (Plaintiff's Exhibit 8)?

I think this elevation on the map (Plaintiff's Exhibit 3) to be what I call (R. 2005) Cane Island, and which I visited [indicating].

SPECIAL MASTER. Now, can it be identified on the map?

A. Apparently it is about two miles from the north end of Cole Island where I started across the swamp.

Mr. LILJEQVIST. A mile and a half of B. Ausmus' house shown on the map (Plaintiff's Exhibit 3), in the south part of section 28, township 25 south, range 32½ east, north of the lake?

A. Yes.

The area is probably four or five acres.

I should judge greasewood covered approximately one acre.—Stanley G. Jewett. (R. 2006.)

Mr. BLACKMAR. Q. Some of the witnesses have referred to an island called Cane Island. Do you know of such an island in there? (R. 2132.)

A. There is a high ridge on the lower part of our field that we always called Cane Island; it was commonly called Cane Island.

It is located north and a little west of Cole Island; and there is a little cane on Cole Island, too.—Joe Ormand Ausmus. (R. 2133.)

Mr. BLACKMAR. Q. Some of the witnesses also mentioned an island which is apparently west of the north end of Cole Island, which they described as Cane Island. Do you recall that island up in there? Was it known to you as Cane Island?

A. That is a continuation, or rather the northern extremity of Cole Island; and my recollection is that when I first heard of that island, and first saw it, it was called Cane Island.—Rubin T. Hughet. (R. 2193.)

Cane Island is the higher point which is located approximately 8 inches on the map (Plaintiff's Exhibit 3) a little westerly of south of section 27, T. 25 S., R. 32½ E., north of the lake; it is just outside the Grain Field area marked on the map. Up in that vicinity somewhere is a place that I call Cane Island.—George M. Benson. (R. 2514.)

Cane Island (Mud Lake).—In the season of 1899 when I first saw Mud Lake, I rowed in a boat straight toward Harney Lake from Charlie Haines' store at the Narrows, and I came to a point that we called Cane Island. It was a little island that had very tall grass, eight or nine feet high, of a whitish color; whether Cane Island was the name that was given to it by others or not, I do not know, but we landed there and had our lunch on that island. It was the first place we came to going toward Harney Lake, on which we could land the boat, and a distance of about two miles from the Narrows. (R. 1613.)

Mr. BLACKMAR. Can we get Cane Island located, do you think, Mr. Pecore?

Mr. PECORE. Possibly, Mr. Blackmar, but I am not sure.

I am suspecting that it was a name we gave to it. Anyhow, it was an island where cane grew.

Mr. BLACKMAR. Supposing you step over to the map (Plaintiff's Exhibit 4), Doctor, and see if you can give us some idea as to where that Cane Island was?

A. Here was where we were going [indicating]. We started right in this direction [indicating], and if that would represent two miles—— (Mr. Pecore. That is about a mile)—I would say about here [indicating] somewhere, is where we stopped and ate dinner, and where that tall grass grew. The only place I ever observed it on Mud Lake was at that place, and it has long since ceased to be there.

(Mr. PECORE. The spot he is pointing to (on the map, Plaintiff's Exhibit 4) is in the northeast (R. 1614) quarter of section 4, T. 27 S., R. 30 E., south of the lake.)

SPECIAL MASTER. The doctor identifies that as a point (R. 1614) on a straight line from what other point? On a straight line two miles from the Narrows? He doesn't identify the place except by distance?

A. I can't identify it, and it is a guess as to it being two miles; that is simply a guess.

It was about two miles from the Narrows, in a direction a little south of west. I was trying to get to the channel. The water runs from Mud Lake into Harney Lake, and that was what I was heading for, and I was aiming to go as straight as I could, but I did not get there, however, and so I might have been off the line.—Dr. Llewellyn Eugene Hibbard. (R. 1615.)

Carey, Clarence, place.—Clarence Carey's place is the fractional south half of the southeast quarter; and the southeast quarter of the northeast quarter of section 24, T. 25 S., R. 32½ E.; and the fractional northwest quarter of the northwest quarter of section 19, T. 25 S., R. 33 E.—Pecore (R. 649); Mrs. Ollie Darsey.

Also referred to by witnesses:

	Vol.	Page
Darsey, Mrs. Ollie (R. 649)	I	560
Darsey, Mrs. Ollie (R. 649)	II	985
Darsey, Mrs. Ollie (R. 661)	I	560
Hamilton, Lester Marion (R. 662)	I	560

Carey, Clarence Thomas, place.—The description of this land as shown on Plaintiff's Exhibit 21 is the north half of the northeast quarter, and lots 2 to 10, inclusive, of section 19, T. 25 S., R. 33 E. The date of the patent indicated on the Exhibit is March 5, 1906.—Pecore.

Mr. BLACKMAR. Q. And where is it with reference to the Meldrum line?

Mr. PECORE. Part of it is above, and part of it is below.—Clarence Thomas Carey. (R. 769.)

Also referred to by witnesses:

	Vol.	Page
Carey, Thomas Clarence (R. 771)	I	481
Catterson, Ralph (R. 1717)	II	668

Carey, J. L., place.—The date of patent to Mr. J. L. Carey is March 5, 1906, and it covers the northwest quarter of the northwest quarter of section 19, T. 25 S., R. 33 E.; the southeast quarter of the northeast quarter of section 24, T. 25 S., R. 32½ E.; the northeast quarter of the southeast quarter of section 24, and lots 6 and 7 of section 24, T. 25 S., R. 32½ E., as shown on Plaintiff's Exhibit 21.—Pecore. (R. 795.)

Also referred to by witness:

	Vol.	Page
Carey, J. L. (R. 795)	I	487

Catterson, D. N., place.—When I was a boy it (my parent's place) was known as the D. N. Catterson place. It is west of where Lawen

is now. About a mile west and south of where the depot is at Lawen—the Lawen store.—Ralph Catterson. (R. 1705.)

Also referred to by witness:

	Vol.	Page
Catterson, Ralph (R. 1181)	I	18

Catterson's place.—Is in lot 7, section 22, T. 25 S., R. 32½ E.—Pecore. (R. 434.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Dalton, James M. (R. 610–611)	I	378	Irving, Robert (R. 433–434)	II	649
			Thompson, Grant (R. 715)	I	407

Catterson, Ralph, place.—One place I own down by the (Malheur) lake I got in 1916 (R. 1705), and I have lived on it.

(NOTE.—The place he owns is in lot 7, section 22, T. 25 S., R. 32½ E.—Pecore.) (R. 1706.)

That is not the only place I own near the Neal meander line. I own another 160 acres east and north of there. It is in the name of Ralph and Minnie Catterson. (See *Catterson, Ralph and Minnie, place.*)

This is the place that I built the fence on and extended it down into the Bird Reserve; it is the one closest to the (Malheur) lake. The one I first mentioned (the Ralph Catterson place).

One of my places is known as the Noah Oard ranch and the other the Charlie Oard ranch.—Ralph Catterson. (R. 1706.)

(The Ralph and Minnie Catterson place was formerly known as the Charlie Oard place, and this place is the one which lies the closest to Saddle Butte, in an L shape.

The Ralph Catterson place was formerly known as the Noah Oard place, and is the closest to the (Lake Malheur) Bird Reserve.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Catterson, Ralph (R. 1706)	II	693	Catterson, Ralph (R. 1706)	I	212

Catterson, Ralph and Minnie, place.—In addition to the place I own in lot 7, section 22, T. 25 S., R. 32½ E., I own another 160 acres east and north of there. It is in the name of Ralph and Minnie Catterson.

(NOTE.—That is in the west half of the northwest quarter and the north half of the southwest quarter of section 14, T. 25 S., R. 32½ E.—Pecore.) (R. 1706.)

The place that I built a fence on and extended it down to the Bird Reserve is the one in lot 7, section 22, T. 25 S., R. 32½ E.; it is the one closest to the lake. One of my places is known as the Noah Oard ranch and the other the Charlie Oard ranch.—Ralph Catterson. (R. 1706.)

(The Ralph & Minnie Catterson place was formerly known as the Charlie Oard place, and this place is the one which lies the closest to Saddle Butte, in an L shape.

The Ralph Catterson place was formerly known as the Noah Oard place, and is the closest to the (Lake Malheur) Bird Reserve.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Catterson, Ralph (R. 1707)	I	581	Catterson, Ralph (R. 1708)	II	668

Cawlfield, Jess, place.—See *Smyth, D. H. (Rye), place.*—Jeff Cawlfield. (R. 1887.)

Cawlfield place (father of Jeff and George Cawlfield).—Our family formerly had some property near Malheur Lake. It took in Swan Lake, and it extended east and south, and my brother had a claim right due west of it. I think they settled there in the spring of 1892, which time that land was not surveyed. Our family built a house down there. (R. 1882.)

My father never filed on the land after it was surveyed. I think the Pacific Livestock Company own it now. Venator did own it; he bought the improvements.

Mr. PECORE. Just east of Swan Lake, the south end of Swan Lake.

A. The south end of Swan Lake. It runs to the north end of it, too, and the east, and back into the tules.

Mr. PECORE. R. K. Venator is shown as the patentee of lots 11 and 12, of section 3; lot 2, of section 10; lots 12 and 13, of section 4; and lot 1, of section 9; T. 25 S., R. 32 E., north of the lake. (R. 1883.)

There were improvements on my father's property, and they were sold to Mr. Venator before it was patented. (R. 1884.)

The house was built within fifty yards of Swan Lake on the east side. The ridge ran along there.—Jeff Cawlfield. (R. 1895.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Cawlfield, Jeff (R. 1883).....	II	664	Cawlfield, Jeff (R. 1884).....	I	544

Clark, L. L., place.—I have a squatter's right within the (Lake Malheur) Bird Reserve and south of our homestead; I took that squatter's right up there in 1912. It is known as the L. L. Clark place; it adjoins the Francis Griffin place; it is south of Mr. (W. A. Red) Campbell's place.

It is shown on the map (Plaintiff's Exhibit No. 3) as the L. L. Clark place; on that map that tract is about a mile long, east and west, and approximately a quarter of a mile wide, north and south; the south boundary of it is about half a mile north of the Neal meander line in front of section 29, T. 26 S., R. 31 E.—Pecore; Mrs. Mary Griffin. (R. 1932–1933.)

I had a house on that place which was already there when I bought the improvements from Mr. Clark.—Mrs. Mary Griffin. (R. 1933.)

Cole Island.—Mr. BLACKMAR. Q. This island they call Dunn Island is kind of a continuation of Cole Island?

A. Yes.—Thomas T. Dunn. (R. 1820.)

Comegys place.—My sister, when she was single, in 1893 or 1894, took up a place on land which was unsurveyed at that time, and lived on it. It adjoined the Alva Springer place on the north. (R. 1422.) It was known as the Comegys place. It adjoins on the east where the Hill Brothers now live. I know where the Hill Brothers live at the present time, and the house we lived in there is about quarter of a mile east of their house. The Hill Brothers house is what is known as the Hughet place, Judge Hughet used to have it.—Fay Comegys. (R. 1423.)

The Hill Brothers house is now in the north half of the northeast quarter of section 34, T. 26 S., R. 31 E.—Pecore. (R. 1423.)

Comegys, Sidney, Place.—The Billy Dunn ranch is where Billy Dunn lives now. That is in lot 6, section 34, T. 26 S., R. 31 E., south of the lake.

The house is now quite three-quarters of a mile from the Neal line, south of it. I think the north line of the holding is right up close to the Neal meander line.—Pecore, Sidney Comegys. (R. 1444–1445.)

Mr. Dunn owned land west of me at the time I sold this ranch to him. (R. 1452.) I had 160 acres there, and it was surveyed by the Neal survey. It was not fractional. The ranch Billy Dunn owned west of me was fractional.

Frank Cawlfield owned the land immediately to the north between my land and the meander line. Frank Cawlfield sold it to D. H. (Rye) Smyth. That land immediately north of my place was the land that Cawlfield had the lawsuit about with D. H. (Rye) Smyth. (R. 1453.)

I lived two or three different places before I bought the Caldwell ranch, or what was known as the Caldwell ranch at that time. In 1894 we lived down on this place we moved to. The place I am referring to has been named a good many names; it has been called the Caldwell place, the Sims place, and is, I believe, the Jim Bunyard place now.

Mr. LILJEQVIST. Q. That is the patented land of Jim Bunyard, or surveyed land of Jim Bunyard?

A. I guess it is partly patented, or may be all of it. I don't know how the lines do go through there.—Sidney Comegys. (R. 1455.)

Also referred to by witness:

	Vol.	Page
Comegys, Sidney (R. 1448)	I	183

Cooksie Island.—There is an island just immediately below the Island Ranch—the ranch house proper, called Cooksie Island, but how it derived its name I do not know.—George E. Whiting. (R. 550.)

Creasman patented land.—On this patent map (Plaintiff's Exhibit No. 21), John Creasman is shown as the patentee of the northeast quarter of the northwest quarter, and lots 2, 3, 6, and 7, section 18, T. 26 S., R. 32 E., north of the lake.—Pecore; Mrs. Effie L. Dunn. (R. 848–849.)

Creason house.—Mr. PECORE. On Plaintiff's Exhibit No. 3, the house as she (the witness) describes it to me, stood about a mile and a quarter north, and a little west of a windmill shown on this map in lot 9, section 25, T. 26 S., R 30 E., south of the lake.

Mr. LILJEQVIST. She also said it may have only been three-quarters of a mile.

Mr. BLACKMAR. Q. What is your judgment about that, Mrs. Dunn?

A. Well, I imagine it would be close to a mile and a quarter.—Mrs. Effie L. Dunn. (R. 848.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Elliott, Hadden (R. 2230)	II	993	McGowan, Archie (R. 1569)	II	686

Crowley, Tim, place.—Mr. BLACKMAR. Vickers seems to have been the original owner; then Tim Crowley. (R. 1610.)

Also referred to by witness:

	Vol.	Page
Comegys, Fay (R. 1427)	I	521

Culp, Lloyd B., place.—My place embraces lots 1, 2, 3, 4, 7, and 8 of section 19, T. 25 S., R. 32½ E. It is on that map (Plaintiff's Exhibit No. 3). (Mr. PECORE. (Lots) 4, 7, 8. Right by the Spurlock place.)—Lloyd B. Culp. (R. 1847.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Caldwell, Lee Minis (R. 162)	I	397	Culp, Lloyd B. (R. 1848)	II	672
Culp, Lloyd B. (R. 1850)	I	219			

Dillman, Charles E., place.—It is the southwest quarter of the northeast quarter; the southeast quarter of the northwest quarter; the northeast quarter of the southwest quarter, and the northwest quarter of the southeast quarter of section 14, T. 26 S., R. 31 E.—Pecore, Charles E. Dillman. (R. 1865.)

I had a house on that place.—Charles E. Dillman. (R. 1869.)

Also referred to by witness:

	Vol.	Page
Dillman, Charles E. (R. 1866)	II	687

Drinkwater, Clarence W., place.—The land apparently was inside the Neal meander line south of lots 7 and 9, of section 21, T. 25 S., R. 32½ E. The north boundary of the land as he (the witness) described it was apparently just about even with the southeast corner of lot 7 of that section 21.—Pecore.

That just about describes the location correctly. This place was entirely below the meander line. (R. 1871.)

Mr. BLACKMAR. There was some dispute about that as to (R. 1872) just where it was located.

SPECIAL MASTER. Yes; very well.

Mr. PECORE. As I understood from Mr. Vickers, the property you had was down where there is a shack now located, about a half mile east of the Heinz place, just west of the Ausmus house.

A. No, my place was in 32½—range 32½.

Mr. PECORE. That is six miles east and west, but there is a shack down here south of section 29, and Mr. Vickers, who lived over there in that country told me that he thought the land you had, covered the property that that shack is now on. It is over here south of section 29, instead of south of section 21, as Mr. Drinkwater described it.

A. The place I had was directly south of the Fred Otley property—not the Fred Otley homestead; there was a Fred Otley, jr., and a Fred Otley, sr.

It was south of an Otley tract; south of the Fred Otley, sr., tract.

Mr. PECORE. Fred Otley is the present owner of lot 1 of section 29, T. 25 S., R. 32½ E., which is just north of this Ora Hayes tract as it is now known, on which that shack I spoke of is located.

A. Ora Hayes tract?

Mr. PECORE. Yes. (R. 1873.)

A. At the time I owned it the Scott Hayes tract was directly west, joined this tract that I owned on the west, and the Ora Hayes was what was then the Scott Hayes tract, I guess. (R. 1874.)

Mr. BLACKMAR. Q. Maybe we could identify that more accurately. He said (R. 1877) he is immediately south of his father's, and here is Robert Drinkwater's patent on that land.

A. I don't think it was patented to my father. He bought it from a man named Hendricks, as I recall.

My father's name was Robert.

[Witness looks at map with counsel.]

Mr. PECORE. Q. The lands which Mr. Drinkwater occupied are a half mile square, and the northwest corner of the tract was located very close to the quarter section corner between sections 20 and 29, of township 25 south, range 32½ east. (R. 1878.)

Part of my father's ranch would now be in what they call the Lake Malheur Bird Reserve, and he had that fenced.—Clarence W. Drinkwater. (R. 1879.)

Also referred to by witness:

	Vol.	Page
Drinkwater, Clarence W. (R. 1880)	I	221
Drinkwater, Clarence W. (R. 1875)	II	668
Drinkwater, Clarence W. (R. 1874)	I	543
Drinkwater, Clarence W. (R. 1876)	I	586
Drinkwater, Clarence W. (R. 1880)	II	687

Dunn, Billy, Ranch.—The Billy Dunn Ranch is where Billy Dunn lives now. That is in lot 6, section 34, T. 26 S., R. 31 E., south of the lake.

The house is not quite three-quarters of a mile from the Neal line, south of it. I think the north line of the holding is right up close to the Neal meander line.—Pecore, Sidney Comegys. (R. 1444–1445.)

Mr. Dunn owned land west of me at the time I sold this ranch to him. (R. 1452.) I had 160 acres there, and it was surveyed by the Neal survey. It was not fractional. The ranch Billy Dunn owned west of me was fractional.

Frank Cawlfield owned the land immediately to the north between my land and the meander line. Frank Cawlfield sold it to D. H. (Rye) Smyth. That land immediately north of my place was the land that Cawlfield had the lawsuit about with D. H. (Rye) Smyth.—Sidney Comegys. (R. 1453.)

Also referred to by witnesses:

	Vol.	Page
Comegys, Sidney (R. 1447)	II	660
Dunn, William J. (R. 823)	II	698
Marshall, Alfred L. (R. 2085)	I	618

Dunn Lake.
Dunn Island.—My house is on deeded land. My father started to build a frame of a house on Dunn Island and it stayed there for many years. When he put that little frame of the house there—it was in the nineties sometime, but I do not remember just when. I remember the house stood there, what was left of it, for many years.

Mr. BLACKMAR. Q. This island they call Dunn Island is kind of a continuation of Cole Island?

A. Yes.

I have been out to Dunn Island a good many times. (R. 1820.)

My father never completed that house down there on Dunn Island; just the frame of the house is all.—Thomas T. Dunn. (R. 1821.)

Cross-examination:

There is a little place down there in the southerly part of the (Malheur) lake near Cole Island, that is referred to as the Dunn Lake. (R. 1829.)

With reference to Cole and Pelican Islands, it lays over south of Cole Island, southwest a little, and it lays south of the Dunn Island.

I have not seen water in that (Dunn) lake when there was no water at all west of Cole Island. At certain seasons of the year, Dunn Lake is separated from the open water in Malheur Lake; that separation comes in dry years; in dry years there is no water in Dunn Lake; in dry years there would be no water in Dunn Lake either.

Dunn Lake is that bay that extends easterly of where my mother used to live.

Mr. LILJEQVIST. Q. Are you familiar with that map there? It is a contour map; it is Plaintiff's Exhibit 3. Here is a spring near where your mother had her house. When you are referring to Dunn Lake, is that that open area immediately to the right—to the east of it? A. Yes, sir.

Q. And these little higher points above it, is that what you call Dunn Island? A. Yes.—Thomas T. Dunn. (R. 1831.)

I heard considerable testimony here, Mr. Blackmar, and I have heard references to Cole Island and Dunn Island. Now, my conception of those islands—there were two separate elevations, that is, they were not the same formation, because near the shallow end of Dunn Island is a channel there through which the waters flowed and filled up this small lake which extended southward. I have heard it named the Dunn Lake, but I did not know that it was called Dunn Lake until then.—Rubin T. Hughet. (R. 2187.)

Also referred to by witnesses:

	Vol.	Page
Comegys, Sidney (R. 1460–1461)	I	310
Dunn, Thomas T. (R. 1820)	I	295
Dunn, Thomas T. (R. 1821)	I	328
Dunn, Thomas T. (R. 1831)	I	343
Dunn, Thomas T. (R. 1836)	I	542
Hibbard, Dr. Llewellyn Eugene (R. 1608)	I	326
Hughet, Rubin T. (R. 2187)	I	297
Hughet, Rubin T. (R. 2186)	II	700
Marshall, Alfred L. (R. 2073)	I	331
Marshall, Alfred L. (R. 2073)	I	309

Dunn Martha, the old Dunn house and property.—The old Dunn house, as near as I am able to find out, was on lot 11, section 31, T. 26 S., R. 32 E.—Pecore, William J. Dunn. (R. 837–838.)

Mr. Thomas T. Dunn's mother (Martha Dunn) formerly had a house in lot 5, section 31, T. 26 S., R. 32 E. (Pecore, R. 1918), and practically at the edge of the spring shown on Plaintiff's Exhibit No. 3 in lot 11, same section, township and range.—Pecore, Thomas T. Dunn.

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Hanley, William (R. 1374)	I	390	Shepard, L. W. (R. 1291)	I	516

Dunn Spring.—Dunn Spring is about twenty feet from the old house on the old Martha Dunn place (R. 841) which is located in lot 11, section 31, T. 26 S., R. 32 E. (R. 837–838), and the elevation of the spring is between 4,093 and 4,094 feet; some of it a little-above and some of it a little below.—Pecore, William J. Dunn. (R. 841.)

Dunn, Ted, house.—The Ted Dunn house, as near as I am able to find out, is on lot 2, section 31, T. 26 S., R. 32.—Pecore, William J. Dunn. (R. 837–838.)

Dunn, Thomas T. (Ted), house.—The house in which Mr. Thomas T. Dunn now lives is shown by Plaintiff's Exhibit No. 3, in the southeast corner of lot 2, section 31, T. 26 S., R. 32 E. (R. 837–838.)

His present house is right near the line between sections 6 and 21, Tps. 26 and 27 S., R. 32 E., south of the lake.—Pecore.

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Dunn, Thomas T. (R. 837)	I	539	Hughet, Rubin T. (R. 2179)	I	41

Dunn, Thomas T., homestead.—The final certificate, No. 1232, was issued by the Government on June 11, 1908, to Thomas T. Dunn for lots 4, 9, 10, 11, 12, and 13, section 33, and lot 4, section 28, T. 26 S., R. 32 E. This property is ordinarily known as the Ted Dunn homestead, and it has a shack upon it which is indicated on Plaintiff's Exhibit No. 3, in the northeast corner of lot 12, section 33, T. 26 S., R. 32 E. Mr. Dunn's homestead lies east of what is known as Dunn Lake.—Pecore.

Also referred to by witness:

	Vol.	Page		Vol.	Page
Dunn, Thomas T. (R. 1820)	I	295	Dunn, Thomas T. (R. 1823)	II	702
Dunn, Thomas T. (R. 1824)	II	662			

Dunn, Thomas T., place.—I had a cabin out on that same tract of land now owned by Mr. (Thomas T.) Ted Dunn, and lived there for a while—one summer—and I am quite familiar with that tract of land.—Rubin T. Hughet. (R. 2186.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Dunn, Thomas T. (R. 1841)	II	633	Riddle, Tobias Stilley (R. 544)	I	371
Marshall, John (R. 2237)	I	477			

Dunn, Thomas, T., property.—Mr. Thomas T. Dunn, is the owner of, or now in possession of the following lands on the south side of Malheur Lake: Lots 1, 2, 10, 11, 12, and 13, section 31; lots 1, 2, 3, and 4, section 32; lot 4, section 28; lots 4, 5, 9, 10, 11, 12, and 13 of section 33, all in T. 26 S., R. 32 E., south of Malheur Lake. Lots 6, 7, 8, and south half of the northwest quarter of section 4; lots 3, 4, 9, 10, and southeast quarter of the northeast quarter, and the southeast quarter of the northwest quarter of section 5; lot 3, section 6, all in T. 27 S., R. 32 E., south of Malheur Lake.

Mr. Dunn also uses and claims the land bounded by the fence running north about seven inches on the map, Plaintiff's Exhibit No. 8, from the northwest corner of lot 4, section 32, T. 26 S., R. 32 E;

thence roughly east about 3½ inches on the map, Plaintiff's Exhibit No. 3; thence in a general southerly direction about 9 inches on the same map; thence east about one inch on the same map, and thence southwesterly about half an inch on the same map to the southwest corner of lot 11, section 4, T. 27 S., R. 32 E., all of which is shown on Plaintiff's Exhibit No. 3.—Pecore.

Also referred to by witness:

	Vol.	Page
Dunn, Thomas T. (R. 1821)	I	217

Elliott, Hadden, place.—I had a place down on Mud Lake; it was on deeded land. We got the place sometime after 1900; he (my father) bought out a man named Ware whom, I think, got the homestead.

Mr. LILJEQVIST. It is lot 2, section 32, township 26 south, range 31 east, north of the lake, the Elliott place.

Part of it was the old Ware place, part of it was not.

Mr. LILJEQVIST. Q. Where was the rest of the Ware place?

SPECIAL MASTER. The question is whether the Elliott place embraces all the Ware place, or some more.

A. The Ware place would be up here. [Indicating on map.]

Mr. LILJEQVIST. Easterly of the house. A. Yes. (R. 2226.)

I think it was about a half a mile, but the whole of the Elliott place included the whole of the Ware place.

SPECIAL MASTER. And some more.

A. Old man Ware had a place there, too. There were two Ware places, and maybe more. I don't know. There was quite a family of Wares.—Hadden Elliott on cross-examination. (R. 2227.)

Elliott, Henderson, place.—This place is located right across the channel (at the Narrows) in a northwesterly direction from the Hembree place.—Cortis E. Elliott on cross-examination. (R. 1054.)

Also referred to by witnesses:

	Vol.	Page
Elliott, Hadden (R. 2222)	I	236
Hembree, Guy L. (R. 1343)	II	777
Jenkins, John R. (R. 1817)	I	465

George, A. (Adam) F. B., place and ranch.—The land I had reference to was the A. (Adam) F. B. George place, being lots 1, 2, 7, 8, and 9 of section 2, and lots 1, 2, and 3 of section 1, T. 26 S., R. 32 E., north of the lake.—Pecore, Marcellus B. Hayes. (R. 1200.)

Also referred to by witnesses:

	Vol.	Page
Alberson, Jesse O. (R. 1273)	I	515
Biggs, John W. (R. 1496)	II	969
Brown, Armstead Ellsworth (R. 2176)	I	475
Buchanan, Joseph Warren (R. 920)	I	425
Bunyard, LeRoy (R. 1150)	I	508
Dalton, James M. (R. 612)	I	379
Hamilton, Lester Marion (R. 636)	I	560
Hayes, Marcellus B. (R. 1209)	I	446
Loggan, John Edward (R. 1476)	II	654
Loggan, John Edward (R. 1476)	II	685
Loggan, John Edward (R. 1476)	II	699
Loggan, John Edward (R. 1476)	II	973
Marshall, George (R. 1690)	I	460
Mothershead, Samuel T. (R. 2175)	I	558
Woldenburg, Louis (R. 755)	I	413
Woldenburg, Louis (R. 749)	I	480

Gibson, Archie, place, island.—The only shack I saw down there in Malheur Lake was Archie Gibson's shack, right at the edge; in the early spring the water ran around there and we called it an island because there was a slough that ran down there and cut his cabin off from the mainland; but in the fall of the year, it was dry out to his cabin, there was a good road out there.

I do not know where Archie Gibson's place was located; I should judge it was maybe a mile south of Saddle Butte; that is the only way I could describe it; I do not know the numbers of it; I would not say exactly a mile, but about that.—John G. Darsey. (R. 1968.)

Gibson, James Henry, place and house.—The James Henry Gibson place is indicated on the map (Plaintiff's Exhibit 3) as a house. A description of the land would be north of lots 11 and 12, section 36, T. 26 S., R. 31 E., south of Malheur Lake.

The Neal meander line is the south boundary of his property and it forms the southwestern boundary of his property.

SPECIAL MASTER. Is he within the Neal meander line?

Mr. BLACKMAR. Yes, on the lake bed.—James Henry Gibson. (R. 1170.)

Also referred to by witnesses:

	Vol.	Page
Gibson, James Henry (R. 1174)	I	627
Gibson, James Henry (R. 1169)	I	34
Gibson, James Henry (R. 1169)	I	564
Gibson, James Henry (R. 1175)	II	666
Kado, Joseph (R. 2051)	I	611

Goodman, Sam, place.—This place, which used to be owned by Mr. Charles R. Peterson, and which is now occupied by Mr. Sam Goodman, is just a half a mile east of the northeast corner of section 1, T. 26 S., R. 32 E., north of Malheur Lake.—Charles R. Peterson. (R. 674.)

Grain field swamp.—The Blitzen (River) and the McLaughlin Slough commence out of a big swamp immediately south of them, which is now called the Grain Field Swamp.—Prim Ortego. (R. 528.)

Grain field swamp (on the Blitzen River).—The grain field was swamp up by the Escondido Ranch.—Maurice Fitzgerald. (R. 1808.)

(NOTE.—The grain fields are situated southwesterly of Rocky Ford, and Rocky Ford Lane runs east and west along the south line of sections 15, 16, 17, and 18, township 28 S., R. 31 W., Willamette Meridian, as shown on map prepared by Division of Agriculture, Engineering Bureau of Public Roads, United States Department of Agriculture, May, 1931, showing the Eastern Oregon Livestock Company's lands from a mile south of Rocky Ford to Sodhouse Lane, and filed as an exhibit In the Matter of the Adjudication of the Waters of the Blitzen River now pending before the State Engineer of Oregon, said exhibit prepared under the direction of Mr. L. T. Jessup.)

Graves, John Emery, "Doc", grain field.—Mr. BLACKMAR. Is the grain field marked on your map (Plaintiff's Exhibit 3)?

Mr. PECORE. No, sir; it is not.

The WITNESS. A. It is not hardly worth showing.

Mr. BLACKMAR. Give me the location of the Grain Field.

Mr. PECORE. It is about 300 yards south of your pump house, isn't it?

The WITNESS. A. Yes; something like that. It was southwest of the house.

Mr. PECORE. On this map (Plaintiff's Exhibit 3), about midway between the north and south meander line on the (Malheur) lake, and about two miles south of the south boundary of lot 6, section 2, township 26 south, range 32 east, north of the lake, is indicated a house, and the grain patch was about 200 yards, as I remember it, southwest of that house.

A. That is right. (R. 2103.)

The elevation of the Grain Field will be between 4,092 and 4,093 feet, as nearly as I can estimate the position.—John Emery Graves; Pecore (R. 2104).

Graves Ridge.—The Graves Ridge referred to is in the area that runs from the water gage shown at the corner of lots 5 and 6 of section 2, T. 25 S., R. 32 E., north of the lake; then southerly about six inches; thence southeasterly another six inches, on Plaintiff's Exhibit 3, and runs in a general northwesterly and southeasterly direction.—George M. Benson. (R. 2509.)

Also referred to by witness:

	Vol.	Page
Benson, George M. (R. 2505)	II	722

Graves, Sam or "Doc.", place.—Mr. Sam Graves lived not far from us, in a southwesterly direction and farther down the lake. That place is the one that Doc. Graves lives in (R. 1009) now, the very same place.

The Sam or Doc. Graves place is located in lot 3, section 35, T. 25 S., R. 32 E., north of the lake. It is a little north of west of the house that is on the Clark place.—Pecore; Mrs. Julia Ann Clark. (R. 1010.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Benson, George M. (R. 2533)	I	620	Graves, John Emery (R. 2124)	I	619
Clark, William Joseph (R. 1032)	I	502	Hayes, Marcellus B. (R. 1198)	I	476
Dodge, Matt V. (R. 2372)	I	265	Heins, John W. (R. 1939)	II	997
Dunn, Thomas T. (R. 1829)	I	541	Hughet, Rubin T. (R. 2184)	I	497
Dunn, Thomas T. (R. 1831)	I	542			

Graves, Sam and John Emery "Doc.", place.—I and my brother formerly had a place in the (Lake Malheur) Bird Reserve that we lived on.

We have deeded land above that place. I could not say the number of acres that we have within the (Lake Malheur) Bird Reserve, but I guess it is around 2,000 acres; there are several pieces of land to-

gether; there is a fence between part of it; the lower part that I have fenced I have for winter use. (R. 2100.)

Mr. PECORE. His (John Emery ("Doc.") Graves) house is in lot 3, section 35, T. 25 S., R. 32 E.; and the southern boundary of his land in the (Malheur) lake extends, as I understand it, down to a point about a mile and a half north of the Neal meander line in section 26, T. 26 S., R. 31 E. His fences are shown on Plaintiff's Exhibit 3.

The house in which he (John Emery ("Doc.") Graves) lives is back on patented land about a mile from the (Neal) meander line.—Pecore.

The WITNESS. I have had a house down there within the (Lake Malheur) Bird Reserve. I wintered there the first winter I was there—1900 (R. 2099); I think my brother built the house; I wouldn't say he built it or whether he bought it; at any rate (R. 2101) it was there when I came into the country.—John Emery Graves. (R. 2102.)

Also referred to by witnesses:

	Vol.	Page
Catterson, Frank (R. 1190)	I	511
Dunn, Thomas T. (R. 1831)	II	702
Graves, John Emery (R. 2106–2107)	I	228
Graves, John Emery (R. 2106)	II	694
Hibbard, Dr. Llewellyn Eugene (R. 1610)	I	344
McGowan, Archie (R. 1558)	II	668

Griffin, Francis, place.—I remember the Grout place. I can not tell you where it is located but it was farther down the lake.—Mrs. Julia Ann Clark. (R. 1010.)

Mr. PECORE. The Grout place is known as the Francis Griffin place, and is shown on the map, Plaintiff's Exhibit No. 3. It is about mid-way between the Neal meander lines on the north and south sides of Malheur Lake, and about due south of the line between sections 17 and 18, T. 26 S., R. 32 E., north of the lake; right in there [indicating]. There are two houses on that property right in there [indicating]. (R. 1010.)

Also referred to by witness:

	Vol.	Page
Caldwell, Mrs. Myrtle (R. 2293)	I	601

Griffin, Gerald, homestead.—My husband has a homestead on the north side of the lake; it was known as the Gerald Griffin homestead.

The Plaintiff's Exhibit No. 3 shows that lots 1, 2, and 6, and the south half of the northeast quarter of section 13, T. 26 S., R. 31 east, was patented to Gerald Griffin August 5, 1898.—Pecore; Mrs. Mary Griffin. (R. 1931–1932.)

Also referred to by witness:

	Vol.	Page
Griffin, Mrs. Mary (R. 1935)	I	551
Griffin, Mrs. Mary (R. 1931)	I	34
Griffin, Mrs. Mary (R. 1936)	II	688

Griffin, Mary, place.—See *Clark, L. L., place.*—Mrs. Mary Griffin. (R. 1932–1933.)

Grout place.—I remember the Grout place. I can not tell you where it is located, but it was farther down the lake.—Mrs. Julia Ann Clark. (R. 1010.)

Mr. PECORE.—The Grout place is known as the Francis Griffin place, and is shown on the map, Plaintiff's Exhibit No. 3. It is about midway between the Neal meander lines on the north and south sides of Malheur Lake, and about due south of the line between sections 17 and 18, T. 26 S., R. 32 E., north of the lake; right in there. There are two houses on that property right in there. (R. 1010.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Campbell, W. A. (R. 1975)	I	553	Clark, Julia Ann (R. 1009)	I	497
Campbell, W. A. (R. 1938)	I	554			

Guano Island.—I remember where Pelican Island was, and then there was a Cole Island which (R. 1916) they called Guano Island. (R. 1917.)

Mr. BLACKMAR. Q. Can you tell me the direction of that island from Pelican Island?

A. As near as I can remember, it must have been about southeast, but I wouldn't be sure. If we could locate it on the map we could tell, but there was quite a good-sized island there, you know. I don't think it ever was covered with water.—Edmund J. Martin. (R. 1918.)

On Pelican Island there was all kinds of grass and tules; I do not know what all kinds of grasses there were, but, of course, it was the kind that grows there, and on Guano Island was the same way. There was quite a bunch of horses on Guano Island.

Mr. BLACKMAR. Do you know this island called Guano Island?

Mr. PECORE. It is the first time I ever heard of it.

SPECIAL MASTER. It has been spoken of here before.

Mr. BLACKMAR. Yes.

Q. Was there any vegetation on this Guano Island?

A. Yes; there was good feed for horses and stock, and they could stay there all winter.

Q. Was there any greasewood on that island that you remember? (R. 1917.)

A. I think there was some; I can not remember for sure about that. I think we camped all night on that Island, and it was perfectly dry.

Q. Can you tell me the direction of that island from Pelican Island?

A. As near as I can remember, it must have been about southeast, but I wouldn't be sure. If we could locate it on the map we could tell, but there was quite a good-sized island there, you know. I don't think it ever was covered with water.

Cross-examination:

Mr. LILJEQVIST. Here is Windy Point over here [indicating to witness on the map (Plaintiff's Exhibit 3)].

A. Well, they were growing out here, and this is where I saw them, and it was probably there. We were camped here [witness indicating on map].

SPECIAL MASTER. That doesn't mean anything in the record at all.

Mr. LILJEQVIST. Q. You were camped here on the peninsula? (R. 1919.)

A. Yes; we were camped on the peninsula, on this peninsula and while there I started out, and the wind was coming this way [witness indicating].

Q. Coming from the west?

A. Yes. And blowing water clear around back of the lake, around this side [indicating].

Q. The wind blew it around the lake?

A. Yes. There was a low place through there where the wind came, and it would drive it right around.

Q. The wind blew the water through a low point at the north of the peninsula?

A. Yes; north? Yes, north; that is right.—Edmund J. Martin. (R. 1920.)

Mr. BLACKMAR. Q. There was one witness—Edmund J. Martin—(R. 1917) who mentioned an island here the other day, called Guano Island. Is that Island known to you?

A. No, sir.—Rubin T. Hughet. (R. 2193.)

Haley's present place, channel.—The channel that goes by Scott Haley's present place where he now lives is just half an inch on the map, Plaintiff's Exhibit No. 3, practically east of the Neal meander corner of sections 17–18, T. 26 S., R. 32 E.—Pecore. (R. 292.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Parker, Carlton Emery (R. 777)	I	415	Witzel, John H. (R. 1100)	I	384

Haley, W. Scott, place and house.—The cabin is about six inches on the map, Plaintiff's Exhibit No. 3, almost straight north of the north end of the north and south center line of section 29, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 709.)

I know a man by the name of Scott Haley; he came in there the same day that I did; he is a friend of mine. The house was on his place, too (when he went in there), and it was owned previously by the daughter of Cap. Waters; she owned both places.—W. A. Campbell. (R. 1971.)

I located on lines established on the Neal (meander line) survey, and if it was surveyed it would be in two sections, 20 and 21. (R. 1987.) I guess there are close to 400 acres in that field that I have.—W. Scott Haley. (R. 1988.)

Also referred to by witnesses:

	Vol.	Page
Buchanan, Joseph Warren (R. 920)	I	425
Bunyard, LeRoy (R. 1153)	I	319
Bunyard, James G. (R. 2166)	I	598
Campbell, W. A. (R. 1983)	I	554
Fry, George (R. 1127)	I	439
Gardner, John (R. 293)	I	354
Gardner, John (R. 274)	I	399
Gardner, John (R. 292)	I	623
Gillman, Charles E. (R. 1860–1861)	I	583
Haley, W. Scott (R. 1989)	II	689
Haley, W. Scott (R. 1988)	I	224
Haley, W. Scott (R. 1988)	I	555
Hembree, John L. (R. 916)	I	424
Hibbard, Dr. Llewellyn Eugene (R. 1631)	I	579
Hughet, Rubin T. (R. 2184)	I	476
James, George L. (R. 1809)	I	583
Lewis, Simon (R. 790)	I	486
Marshall, John (R. 2237)	I	478
McGowan, Archie (R. 1563)	II	680
McGowan, Archie (R. 1559)	II	686
Shepard, L. W. (1291)	I	516
Thompson, Grant (R. 708)	I	337, 338
Ware, Paul (R. 1330–1331)	I	323
Ware, Paul (R. 1324)	I	518
Ware, Paul (R. 1321)	II	980
Witzel, John H. (R. 1098)	I	383

Haines, Dick, place.—The Dick Haines place is near the south end of Pelican Island; it extends out into the lake.—Ora Winfield Hill. (R. 1718–1719.)

Also referred to by witness:

	Vol.	Page
Hill, Ora Winfield (R. 1718)	I	607

Haines, Myrtle, place.—The Myrtle Haines place is Myrtle Caldwell's place, but not where she is living now. R. J. Haines was Myrtle Caldwell's former husband. That place is in the southwest corner of lot 3, section 17, T. 26 S., R. 33 E., out near but west of Windy Point. There is a stone house and sort of a pit on the place.—Pecore; Grant Thompson. (R. 702–703.)

Also referred to by witnesses:

	Vol.	Page
Alberson, Jesse O. (R. 1280)	I	453
Anderson, Edward (R. 1282)	I	453
Thompson, Grant (R. 702)	I	405

Haines pump.—That pump is located in lot 9, section 13, T. 26 S., R. 32 E., south of the (Malheur) lake.—Pecore; Archie McGowan. (R. 1555.)

Harden & Riley ranch.—The Harden & Riley Ranch is now called the OO Ranch, which Colonel Hanley owns now.—Emil Baker. (R. 588.)

Hayes, Marcellus B. (Ted) place No. 1.—In 1887 when we settled on the east fork of the Silvies River, which was part of the old Malheur (Indian) Reservation (R. 1196), our land was situated in section 34, T. 24 S., R. 32 E., and you go on to the next township south of us, 25 T. R. 32 E., and the old meander line cuts off the southeast part of that, I would say probably three miles from the northeast corner of the township.—Marcellus B. Hayes. (R. 1197.)

Also referred to by witnesses:

	Vol.	Page
Buchanan, Joseph Warren (R. 926)	I	319
Hayes, Marcellus B. (R. 1236)	I	614
Hayes, Marcellus B. (R. 1237)	II	644
Hayes, Marcellus B. (R. 1198)	II	698

Hayes, Marcellus B. (Ted) place No. 2.—I own a place in section 36, T. 25, R. 32 E., and the house where Dell Hayes lives now is situate right in the south portion of lot 3, section 36, the same township and range, north of the lake.—Marcellus B. Hayes. (R. 1198.)

Heinz, Frank or P. F., place.—The land apparently was inside the Neal meander line south of lots 7 and 9, of section 21, T. 25 S., R. 32½ E. The north boundary of the land as he (the witness) described it was apparently just about even with the southeast corner of lot 7 of that section 21.—Pecore.

The WITNESS.—That just about describes the location correctly. This place was entirely below the meander line. (R. 1871.)

Mr. BLACKMAR. There was some dispute about that as to (R. 1872) just where it was located.

SPECIAL MASTER. Yes, very well.

Mr. PECORE. As I understood from Mr. Vickers, the property you had was down where there is a shack now located, about a half mile east of the Heinz place, just west of the Ausmus house.

A. No, my place was in 32½, range 32½.

Mr. PECORE. That is six miles east and west, but there is a shack down here south of section 29, and Mr. Vickers, who lived over there in that country told me that he thought the land you had covered the property that that shack is now on. It is over here south of section 29, instead of south of section 21, as Mr. Drinkwater described it.

A. The place I had was directly south of the Fred Otley property—not the Fred Otley homestead; there was a Fred Otley, jr., and a Fred Otley, sr.

It was south of an Otley tract; south of the Fred Otley, sr., tract.

Mr. PECORE. Fred Otley is the present owner of lot 1 of section 29, T. 25 S., R. 32½ E., which is just north of this Ora Hayes tract as it is now known, on which that shack I spoke of is located.

A. Ora Hayes tract?

Mr. PECORE. Yes. (R. 1873.)

A. At the time I owned it the Scott Hayes tract was directly west, joined this tract that I owned on the west, and the Ora Hayes was what was then the Scott Hayes tract, I guess. (R. 1874.)

Mr. BLACKMAR. Q. Maybe we could identify that more accurately. He said (R. 1877) he is immediately south of his father's, and here is Robert Drinkwater's patent on that land.

A. I don't think it was patented to my father. He bought it from a man named Hendricks, as I recall.

My father's name was Robert.

Witness looks at map with counsel.

Mr. PECORE. The lands which Mr. Drinkwater occupied are a half mile square, and the northwest corner of the tract was located very close to the quarter section, between sections 20 and 29, of township 25 south, range 32½ east. (R. 1878.)

Part of my father's ranch would now be in what they call the Lake Malheur Bird Reserve, and he had that fenced.—Clarence W. Drinkwater. (R. 1879.)

Also referred to by witness:

	Vol.	Page
Heinz, John J. (R. 1680)	I	210

Heinz, John J., place.—My place is located right north of the Showen place, and east of the Herman Ruh homestead.—John J. Heinz.

Mr. PECORE. The house is shown on this map, Plaintiff's Exhibit 3, as being in lot 6, section 30, T. 25 S., R. 32½ E., north of the lake. (R. 1679.)

Also referred to by witness:

	Vol.	Page
Heinz, John W. (R. 1937)	I	551

Heinz, John William, place.—I have a ranch just north of Saddle Butte, about a mile just a little bit east of north of Malheur Slough.—John W. Heinz. (R. 1937.)

Hembree Bridge.—In 1889, my father, Alexander McKenzie, took a place at what is known as the Hembree Bridge, on the Silvies River, where we lived for two years. (R. 1409.)

That place was close to the Island Ranch, I think almost straight across from the Island Ranch to the Silvies River.—Mrs. Fay Comegys. (R. 1409–1410.)

Hembree homestead and place.—The Hembree homestead is located in lots 5, 6, and 11 of section 25 and lots 3, 4, and 5 of section 26, T. 26 S., R. 30 E., south of Malheur Lake.—Pecore. (R. 882.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Hanley, William (R. 1389)	II	950	Hembree, John L. (R. 882)	I	38
Hembree, Guy L. (R. 1338–1339)	II	776	Ortego, Prim (R. 499)	I	367

Hendricks, J. O., place.—I had the J. O. Hendricks place.—Alphena Venator. (R. 2322.)

Hill Brothers house.—The Hill Brothers house now is in the north half of the northeast quarter of section 34, T. 26 S., R. 31 E.—Pecore; Fay Comegys. (R. 1423.)

Hill Brothers place (formerly Star Buckland place).—We also have another place around there within the (Lake Malheur) Bird Reserve. We have a place that we got from Star Buckland. I think we got that in 1924, and we lived there about four years; then we moved onto this other place (the Hill Brothers ranch).

Mr. BLACKMAR. Let us have the location of that second place, Mr. Pecore. It is the Buckland place we are talking about.

Mr. PECORE. It is designated on this map (Plaintiff's Exhibit 3) as "Hill Brothers." The house is a little more than a mile north, and a little east of the Neal meander corner of sections 27 and 28, township 26 south, range 31 east, south of the lake.

There was a house on the Buckland property when we bought it, and a fence.—Lyle B. Hill. (R. 2142.)

During the year 1885 I filed a preemption and located on the east side of the Blitzen River near the Rocky Ford; and after I made the final proof on that and disposed of it, I lived down in the vicinity of the sodhouse, most of the time on a place known as the Sarah E. Marshall place, where the Hill Brothers now live.—Rubin T. Hughet. (R. 2186.)

I had some patented land located down in that country near the (Lake Malheur) Bird Reserve. (R. 2231–2232.)

They told me the other day that the John Marshall place was now the Hill Brothers place. I sold it to Bunyard, and I haven't been back down in that country since I sold it to him. I call it the Bunyard place.

I used some of that land in the (Lake Malheur) Bird Reserve, but I did not have any fence out in the Bird Reserve at all.—John Marshall. (R. 2232.)

I used to have a place down there right straight north of the old Hughet place; it is now known as the Hill Boys place. I took possession of that property I think 25 years ago last February (1931), and I had charge of that property until the summer of 1918.—Mrs. Myrtle Caldwell. (R. 2292.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Benson, George M. (R. 2531)	II	636	Comegys, Fay (R. 1423)	I	520
Caldwell, Mrs. Myrtle (R. 2293)	I	601	Comegys, Sidney (R. 1445)	I	526
Comegys, Fay (R. 1423)	I	201	Hill, Lyle B. (R. 2143)	I	231
			Marshall, John (R. 2240)	I	478

Hill Brothers ranch.—Mr. Hill's place is shown on this map (Plaintiff's Exhibit 3), as "Hill Brothers Ranch," just north of the north boundary of lot 5, section 34, township 26 south, range 31 east, south of the lake.—Pecore. (R. 2141.)

In 1904 I and some other members of our family moved on the Griffin tract within the present (Lake Malheur) Bird Reserve (R. 2161) and we were there for two or three days; I imagine it was in about July.

We then moved from there over onto the other side of the (Malheur) lake onto the land my father owned up until he died, which is also in the (Lake Malheur) Bird Reserve. It is known among the settlers as the Bunyard Ranch. It is the place where the Hill boys now live.—James G. Bunyard. (R. 2162.)

That is shown here (Plaintiff's Exhibit 3) as the Hill Brothers Ranch, and it is just north of the north boundary of lot 5, section 34, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 2162.)

Mr. BLACKMAR. Q. Who owned the deeded land which joined you on the south? As I understand it, this place ran right up to the deeded land, didn't it?

A. Well, when we first moved in there John Marshall owned it. (R. 2164.)

Mr. BLACKMAR. It may be that you and I do not understand each other on this.

Q. I understood the place you moved to down there was also within the Bird Reserve?

A. The place we moved to when we went there was within the Bird Reserve. (R. 2165.)

Q. Was that the place you only stayed three days?

A. No. The place we stayed about three days was over by Haley's.

The place we moved onto on the south side of the (Malheur) lake was within the Bird Reserve. That tract is north of the John Marshall tract.

SPECIAL MASTER. I thought he was farther out in the like, but he was nearer?

A. Yes.

SPECIAL MASTER. He had surveyed lands, did he?

A. Yes. He had deeded lands.—James G. Bunyard. (R. 2165.)

Cross-examination:

With reference to when we went on that land and asserted claims to it, I think my father put up hay on that place along about 1906; he has had it ever since, and it is fenced; I do not know just exactly the number of acres in it, but I think it is around seven or eight hundred acres.—James G. Bunyard. (R. 2169.)

I have not identified in the record the place where Mr. James G. Bunyard is now living; the house is marked "J. Bunyard" (on the map, Plaintiff's Exhibit 3) and it lies between a quarter of a mile and a half a mile slightly west of north of the meander corner of the Neal (meander) line, sections 26 and 27, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 2170.)

The land immediately south of me is owned by the Hill Brothers, and it was formerly owned by Judge Hughet.—James G. Bunyard. (R. 2170.)

Also referred to by witnesses:

	Vol.	Page
Bunyard, James G. (R. 2161)	I	16
Bunyard, James G. (R. 2165)	II	695
Bunyard, James G. (R. 2164)	II	670
Hill, Lyle B. (R. 2141)	I	39
Pecore, Chester W. (R. 93)	II	675

Hill homestead.—Prior to 1924 we lived on the eastern end of Malheur Lake, on my father's homestead, which was patented.—Lyle B. Hill. (R. 2142.)

Hill, Joe, place.—Mr. BLACKMAR. Will you make a note of Joe Hill and see if we can locate his place, Mr. Pecore?

Mr. PECORE. All right, I will.

A VOICE. That is the Huffman place.

Mr. PECORE. He said it is the Huffman place near the Vickers place, or right below the Vickers house, as shown on Plaintiff's Exhibit No. 3. (R. 962–963.) The Hill place is pretty well defined on the map (Plaintiff's Exhibit No. 3).—James M. Brandon. (R. 1000.)

Also referred to by witnesses:

	Vol.	Page
Brandon, James M. (R. 999)	I	434
Brandon, James M. (R. 964–965)	I	626
Catterson, Frank (R. 1183)	I	510
Clark, Joseph William (R. 1025)	I	435
Culp, Lloyd B. (R. 1852)	II	983
Hayes, Marcellus B. (R. 1203)	I	386
Huffman, William David (R. 1584)	I	576

Hill, Lyle B., place (formerly belonged to Bunyard estate).—I owned some patented land along the (Neal) meander line, and I do now. (R. 2143.) The Marshall place joined it immediately to the east. I bought that land from the Bunyard estate. I think I bought that patented land in 1928 or 1929; just a couple of years ago; this is the third season. We rented that place before we purchased it for about two or three years.—Lyle B. Hill. (R. 2144.)

Also referred to by witness:

	Vol.	Page
Hill, Lyle B. (R. 2143)	II	673

Hines mill.—This mill is located at Warm Springs, about three miles south of town here (Burns, Oregon); it is not on the (Malheur) lake.—George S. Sizemore. (R. 1654.)

Also referred to by witness:

	Vol.	Page
Hill, Lyle B. (R. 2143)	I	230

Huffman place.—It is south and west of Vickers; east of Scott Haley's place, and north of Charlie Reed's place. (R. 1574.) We have some 440 acres fenced in there. It was formerly known as the Joe Hill property.—Wm. David Huffman. (R. 1575.)

Mr. PECORE.—The Huffman place is about three-eighths of a mile south of the Vickers house. It is named on this map (Plaintiff's Exhibit No. 3) as "W. Huffman," and it is about two miles north of the corner of sections 27 and 28, 33 and 34, T. 26 S., R. 31 E., south of the lake. (R. 1574.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Brandon, James M. (R. 1000)	I	430	Huffman, William David (R. 1574–1575)	II	667
Huffman, William David (R. 1575)	I	574	Witzel, John H. (R. 1115)	I	385

Hughet, Judge, place.—The Hill Brothers house is what is known as the Hughet place, Judge Hughet used to have it.—Fay Comegys. (R. 1423.)

The Hill Brothers house is in the north half of the northeast quarter of section 34, T. 26 S., R. 31 E.—Pecore. (R. 1423.)

	Vol.	Page
Comegys, Fay (R. 1437)	I	202

Hughet, Rubin T., Judge, place.—I have not identified in the record the place where Mr. James G. Bunyard is now living; the house is marked "J. Bunyard" (on the map, Plaintiff's Exhibit 3) and it lies between a quarter of a mile and a half a mile slightly west of north of the meander corner of the Neal (meander) line, sections 26 and 27, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 2170.)

The land immediately south of me is owned by the Hill Brothers, and it was formerly owned by Judge Hughet.—James G. Bunyard on cross-examination. (R. 2170.)

During the year 1885 I filed a preemption and located on the east side of the Blitzen River near the Rocky Ford; and after I made the final proof on that and disposed of it, I lived down in

the vicinity of the Sodhouse, most of the time on a place known as the Sarah E. Marshall place, where the Hill Brothers now live.—Rubin T. Hughet. (R. 2186.)

Hutchinson place.—Mrs. Billy Dunn's maiden name was Hutchinson and they lived up in the territory where Mr. Scott Haley lived; Mr. Hutchinson had a homestead.

Mr. BLACKMAR. The witness has indicated a place up here south of section 17, township 26 south, range 32 east.

The place where the Hutchinson family lived was known as the Riley place (on the northwest side of Malheur Lake).—John L. Hembree. (R. 891–892.)

Also referred to by witness:

	Vol.	Page
Hembree, John L. (R. 891)	I	422

Island, the Island Ranch.—The Island was formed by the forking of the Silvies River, one branch following a course easterly and the other westerly, and then joining again, thus forming an island. The Island Ranch was on that Island, and situated about three or four miles north of Malheur Lake.—Lee Minis Caldwell. (R. 139–140.)

The Island Ranch is located about twelve miles south and east of Burns at what we call Wright's Point. At one time Wright's Point was the old Government camp called Camp Wright.—Frank Whiting. (R. 185.)

I am familiar with the Island Ranch; do not know where it gets its name; there are a number of islands all the way from the fork on Silvies River immediately below Burns here where the river divides that has always been termed "The Island." We have always known it as "The Island." Then there are a number of islands all the way down; there is an island just immediately below the Island Ranch—the ranch house proper, called Cooksie Island, but how it derived its name I do not know.

Most all of the Island Ranch has grass on it and is pretty well watered by the Silvies River.

Mr. BLACKMAR. Q. It was not water that backed up from the lake, but water that came out of the Silvies River?

A. Yes, sir. We are not talking about the Red "S" (Ranch or Field).

Probably the ranches are all the same ranch, but we always knew that as the Red "S."—George E. Whiting. (R. 550.)

Northerly of the "Red 'S' Field," and between the east and west forks of the Silvies River, is what is called the "Island Ranch." That ranch lies below the Bell A Ranch.—William Hanley. (R. 1395.)

Also referred to by witnesses:

	Vol.	Page
Baker, Emil (R. 588)	I	11
Baker, James Thomas (R. 573)	I	12
Baker, Robt. Dillard (R. 1073)	I	12
Baker, Robert Dillard (1079)	I	507
Baker, Robert Dillard (R. 1074)	II	942
Brandon, James M. (R. 960)	I	430
Brown, Robert Hamilton (R. 1084)	I	436
Caldwell, Lee Minis (R. 139–140)	II	647
Catterson, Frank (R. 1185)	I	512
Clark, Emanuel M. (R. 1735)	I	20
Clark, Emanuel M. (R. 1737)	I	463
Comegys, Mrs. Fay (R. 1410)	I	24
Darsey, Mrs. Ollie (R. 645–646)	I	27
Darsey, Mrs. Ollie (R. 646)	II	941
Donegan, James J. (R. 1529)	I	537
Fitzgerald, Maurice (R. 1777)	I	32
Fitzgerald, Maurice (R. 1775)	II	940
Howser, Thomas George (R. 213)	I	40
Jackson, John R. (R. 620)	I	42
Kilburn, Campbell C. (R. 734)	II	936
Kilburn, Campbell C. (R. 729)	I	44
Lucas, Martin Anderson (R. 423)	II	921
McKinnon, Robert J. (R. 811)	I	46
Shepard, T. W. (R. 1293)	I	517
Smyth, George A. (R. 670)	I	402
Venator, Alphena (R. 2316)	I	59
Venator, Alphena (R. 2318)	I	336
Venator, Alphena (R. 2316)	I	395
Whiting, Schuyler (R. 170)	I	61
Whiting, Frank (R. 188)	I	397

Johnson, Charles Sumner, place.—The Simon Lewis place is located in lots 1, 2, and 3 of section 17, T. 26 S., R. 32 E., north of the lake.—Pecore. (R. 1256.)

My place joined the Simon Lewis place and it was hardly a quarter of a mile easterly from Mr. Lewis' cabin.—Charles Sumner Johnson. (R. 1257.)

Also referred to by witness:

	Vol.	Page
Johnson, Charles Sumner (R. 1249–1250)	I	320

Jordan place.—The Jordan place is located in section 16, T. 25 S., R. 32½ E.—J. W. Biggs. (R. 1491.)

I was on old man Jordan's place; I had it rented there for three or four years. That place was situated north of the meander line.—James A. Turner. (R. 1734.)

Also referred to by witnesses:

	Vol.	Page
Catterson, Ralph (R. 1717)	II	668
Turner, James A. (R. 1721–1722)	I	533
Venator, Alphena (R. 2323–2324)	I	238

Jordan ranches.—I had the Jordan ranches leased, but I do not know just the year.—Alphena Venator. (R. 2322.)

Kado, Joseph, place.—This is also known as the George Marshall place and is located in lots 9 and 10, the west half of the northwest quarter and the southeast quarter of the northwest quarter, section 36, T. 26 S., R. 31 E., south of the lake. That was the land that was patented to George Marshall.—Pecore. (R. 1689.)

Cross-examination:

The north line of my land is right near where Mr. Benson has a cabin now. I sold my land to Luft, and I think Joe Kado owns it now.—George Marshall. (R. 1697.)

I own a place down near the Springer place, near Malheur Lake, which I have lived on since 1919.—Joseph Kado. (R. 2047.)

Mr. Kado's place is just about the north boundary of lot 1, section 36, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 2048.)

I first moved in there in 1919. (R. 2048.) There is about a mile, I can not say exactly, of my land on the Neal meander line. (R. 2049.) The house that I have now was not built before I went in there (on my place). There was no house there at all (when I went there).—Joseph Kado. (R. 2050.)

Mr. LILJEQVIST. Q. Let's get this phase of it straight, then. Mr. Springer thought that this house over in this picture was your house (Plaintiff's Exhibit 37).

Mr. SPRINGER. George Marshall's.

Mr. LILJEQVIST. The George Marshall house. Did you buy any house from George Marshall?

A. No, sir.—Joseph Kado.

Q. This wasn't the Kado house at all?

Mr. SPRINGER. It has been the same place, but a different house.

Mr. LILJEQVIST. I see. That is all right. (R. 2050.)

Also referred to by witnesses:

	Vol.	Page
Benson, George M. (R. 2523)	II	731
Gibson, James Henry (1178)	I	567
Kado, Joseph (R. 2047)	I	43
Kado, Joseph (R. 2048)	I	610
Kado, Joseph (R. 2049)	II	694
Springer, Alva (R. 2018)	I	466
Wise, Judd A. (R. 1953)	I	587

Kidwell, Bud, place.—I never knew Bud Kidwell except by hearsay until lately. I have heard of him for a good while, but I have not got personally acquainted with him yet. I know him when I meet up with him. There is a place down near my place which Bud Kidwell claims. He (Bud Kidwell) did not have any hay on his place in those days; he was not there at that time; he came here lately.—W. A. Campbell. (R. 1975.)

Lewis, Simon, place.—I obtained patent to a piece of land on the north side of Malheur Lake.—Simon Lewis. (R. 781–782.)

Mr. PECORE. That was in section 17, T. 26 S., R. 31 E., north of the lake. The patent map (Plaintiff's Exhibit No. 21) shows "Simon Lewis patented on August 12, 1901."

Mr. BLACKMAR. That covered down to the Neal meander line, did it?

Mr. PECORE. Yes, sir.—Simon Lewis. (R. 782.)

Also referred to by witness:

	Vol.	Page
Johnson, Charles Sumner (R. 1249)	I	320
Johnson, Charles Sumner (R. 1255)	I	321
Johnson, Charles Sumner (R. 1252)	I	341

Luft place.—This is also known as the George Marshall place and is located in lots 9 and 10, the west half of the northwest quarter and the southeast quarter of the northwest quarter, section 36, T. 26 S., R. 31 E., south of the lake. That was the land that was patented to George Marshall.—Pecore. (R. 1689.)

Cross-examination:

The north line of my land is right near where Mr. Benson has a cabin now. I sold my land to Luft, and I think Joe Kado owns it now.—George Marshall. (R. 1697.)

McKenzie, Alexander, homestead.—Mr. PECORE. We have a considerable area of land shown as being owned by Alexander McKenzie, but it is all shown as patented to other people, patented to Elliott and Indemnity Lands to Oregon.

The Alexander McKenzie homestead (at the Narrows) is situated in the east half of the southwest quarter and lots 3 and 4, section 23, T. 26 S., R. 31 E., north of the lake.—Pecore. (R. 1411.)

McKenzie, A., house.—His (Wm. Henry McKenzie) father's house is shown here (on the map, Plaintiff's Exhibit 3) as "A. McKenzie," and it is in the west half of the northeast quarter of section 26, T. 26 S., R. 31 E.—Pecore. (R. 2150.)

McKenzie place.—In 1889, my father, Alexander McKenzie, took a place at what is known as the Hembree Bridge, on the Silvies River, where we lived for two years. (R. 1409.) That place was close to the Island Ranch, I think almost straight across from the Island Ranch to the Silvies River.—Mrs. Fay Comegys. (R. 1409–1410.)

Also referred to by witnesses:

	Vol.	Page
Comegys, Mrs. Fay (R. 1410)	I	24
Comegys, Fay (R. 1426)	I	521
Comegys, Mrs. Fay (R. 1417)	II	778
Elliott, Hadden (R. 2222)	I	30
Elliott, Hadden (R. 2216)	II	786
McKenzie, William Henry (R. 2149)	II	682
McKenzie, William Henry (R. 2151)	II	769
Wise, Judd A. (R. 1955)	I	223

McLaughlin slough.—This Slough is up at what we call the Rocky Ford Lane.—Darius Hynson Smyth. (R. 471–472.)

McLaughlin Slough is just one branch of the Blitzen River. The water runs from the Blitzen River into the McLaughlin Slough. That slough is not very far (R. 511), I should judge a little over a mile, to the Rocky Ford. (R. 512.)

The Rocky Ford Lane is situated immediately south of the Big Sagebrush Field; that was an old rock ford where the river broadened out; it was the only place you could ford the river; when you crossed the ford and traveled toward the northwesterly side, around Rattlesnake Butte, you would come across the old west ford of the Blitzen called McLaughlin Slough.

Both the Blitzen and the McLaughlin Slough commence out of a big swamp immediately south of them called the Grain Field Swamp.—Prim Ortego. (R. 528.)

There are no streams at all flowing through the Big Sagebrush Field which is north of where the Rocky Ford Lane is located, excepting the west fork of the Blitzen, and the Blitzen River itself. The west fork and the Blitzen come together.

Mr. LILJEQVIST. Q. And it is now called McLaughlin Slough?

A. Yes.

McLaughlin Slough and the Blitzen River isn't 10 or 12 or 14 feet deep through that Big Sagebrush Field. The McLaughlin Slough, when you get out into the Sagebrush Field, disappears.

Mr. LILJEQVIST: Q. It is a very deep slough for a long ways there, isn't it?

A. No. It has levees in it and it has had levees for years. You see I operated on the Blitzen for 10 or 12 years.—William Hanley. (R. 1378.)

I am familiar with the McLaughlin Slough. (R. 1806.)

Mr. LILJEQVIST. Q. If they (the early settlers) crossed at the Rocky Ford Lane, and they wanted to go back to the Malheur Lake, would they have had to cross what is known as the west fork of the Blitzen?

Q. After crossing the rock ford——

A. (Interrupting.) They would not have to cross any more Blitzens.

Q. How would they get across McLaughlin Slough, without fording it?

A. I suppose they could cross it. There may have been many crossings on McLaughlin Slough. I don't know so much about (R. 1808) McLaughlin Slough.

Q. Was there any other stream west of the Blitzen, west of Rocky Ford Lane, excepting McLaughlin Slough?

A. Not that I ever knew of.

Q. And that flows northeast into the Blitzen River, doesn't it?

A. I think it does.—Maurice Fitzgerald. (R. 1809.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Fitzgerald, Maurice (R. 1506)	II	939	Hughet, Rubin T. (2196)	II	952

Mahon, Jim, place.—I knew a man by the name of Jim Mahon who had a place along the edge of the (Malheur) lake, probably 2½ miles north of Windy Point that we speak of; I could not say positively whether it was in the Bird Reserve—there was only part of it in the Bird Reserve; it laid along the edge of the lake, along its bank; it was patented to him. (R. 1509.)

Lucy Mahon is probably his wife.—Orin Eugene Thompson. (R. 1510.)

That is in the northeast quarter of the northeast quarter, and lots 9 and 10, section 28, lots 1, 2, 4, 5, 7, and 8, and the southwest quarter of the southwest quarter of section 27, and lots 1, 12, and 13, in section 34, T. 25 S., R. 33 E.—Pecore. (R. 1510.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Catterson, Ralph (R. 1715)	II	668	Thompson, Orin Eugene (R. 1510)	II	706
Thompson, Orin Eugene (R. 1509)	I	455			

Malheur Slough.—Malheur Slough as it enters the (Malheur) lake, spreads out, and it doesn't have a definite channel, but it comes down

through section 19, T. 25 S., R. 33 E., and spreads all over the country down there.—Pecore. (R. 766.)

The Nine Mile Slough goes into Malheur Slough.—John W. Heinz. (R. 1948.)

Marshall, Alfred L., place.—The Marshall place embraces lots 5, 6, 7, 8, 9, and 14, and the northeast quarter of the southwest quarter of section 31, T. 26 S., R. 32 E., south of the lake.—Pecore. (R. 2067.)

I really have been in use (possession) of that property since 1889.—Alfred L. Marshall. (R. 2067.)

In front of my patented lands I have some other property that I claim on unsurveyed land. There must be close to 1,400 acres fenced in there. All of the unsurveyed land, about 1,200 to 1,400 (acres) is below the (Neal meander) line, and the patented land is not included in that; I was speaking only of the unsurveyed (R. 2067) land. (R. 2068.)

Mr. BLACKMAR. Is that field indicated on your map, Mr. Pecore?

Mr. PECORE. Yes, sir.

Mr. BLACKMAR. Will you show it to us and describe it for the record?

Mr. PECORE. It is outlined with an irregular dotted line and marked on the inside of the field with the words "Grain Field," and it lies—the south edge lies slightly more than a mile north of the meander line of section 31, township 26 south, range 32 east, south of the lake.—Alfred L. Marshall. (R. 2069.)

Also referred to by witnesses:

	Vol.	Page
Marshall, Alfred L. (R. 2066)	I	46
Marshall, Alfred L. (R. 2067)	I	225
Marshall, Alfred L. (R. 2067)	I	470
Marshall, Alfred L. (R. 2068)	II	694
Marshall, Alfred L. (R. 2068)	II	656
Marshall, Alfred L. (R. 2077)	II	680
Pecore, Chester W. (R. 93)	II	675
Witzel, John H. (R. 1104)	I	384

Marshall, Bill, place.—In later years, I can not place the year, I had the Bill Marshall place.—Alphena Venator. (R. 2322.)

Also referred to by witnesses:

	Vol.	Page
Finley, William L. (R. 2299)	II	671
Finley, William L. (R. 2299)	II	994
Gardner, John (R. 285)	I	354
Gardner, John (R. 285)	II	724
Witzel, John H. (R. 1104)	I	384

Marshall, George, place.—The George Marshall place is located in lots 9 and 10, the west half of the northwest quarter and the southeast quarter of the northwest quarter, section 36, T. 26 S., R. 31 E., south of the lake. That was the land that was patented to him.—Pecore. (R. 1689.)

The Spring Branch has banks to it and that Spring Branch runs through my place; outside of the Spring Branch there is no lake bank there. (R. 1690.)

Cross-examination:

The north line of my land is right near where Mr. Benson has a cabin now. I sold my land to Luft, and I think Joe Kado owns it now.—George Marshall. (R. 1697.)

Mr. LILJEQVIST. Q. Let's get this phase of it straight, then. Mr. Springer thought that this house over in this picture was your house (Plaintiff's Exhibit No. 37).

Mr. SPRINGER. George Marshall's.

Mr. LILJEQVIST. The George Marshall house. Did you buy any house from George Marshall?

A. No, sir.

Q. This wasn't the Kado house at all?

Mr. SPRINGER. It has been the same place, but a different house.

Mr. LILJEQVIST. I see. That is all right.—Joseph Kado. (R. 2050.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Marshall, George (R. 1689)	I	211	Marshall, George (R. 1690)	II	700
Marshall, John (R. 2237)	I	478	Springer, Alva (R. 2042)	II	745
Marshall, George (R. 1689)	II	655			

Marshall, John, land.—The John Marshall land is in the north half of the northeast quarter of section 34, T. 26 S., R. 31 E., south of the lake. The house is indicated on the map (Plaintiff's Exhibit No. 3).—Pecore. (R. 1105.)

Also referred to by witness:

	Vol.	Page
Springer, Alva (R. 2032)	I	467

Marshall, John, place.—Mr. BLACKMAR. Q. Who owned the deeded land which joined you on the south? As I understand it, this place ran right up to the deeded land, didn't it?

A. Well, when we first moved in there John Marshall owned it. (R. 2164.)

Mr. BLACKMAR. It may be that you and I do not understand each other on this.

Q. I understand the place you moved to down there was also within the Bird Reserve?

A. The place we moved to when we went there was within the Bird Reserve.

Q. Was that the place you only stayed three days?

A. No. The place we stayed about three days was over by Haley's. The place we moved onto on the south side of the (Malheur) lake was within the Bird Reserve. That tract is north of the John Marshall tract.

SPECIAL MASTER. I thought he was farther out in the lake, but he was nearer?

A. Yes.

SPECIAL MASTER. He had surveyed lands, did he?

A. Yes. He had deeded lands.—James G. Bunyard. (R. 2165.)

I had some patented land located down in that country near the (Lake Malheur) Bird Reserve. (R. 2231–2232.)

They told me the other day that the John Marshall place was now the Hill Brothers place. I sold it to Bunyard, and I haven't been back down in that country since I sold it to him. I call it the Bunyard place.

I used some of that land in the (Lake Malheur) Bird Reserve, but I did not have any fence out in the Bird Reserve at all.—John Marshall. (R. 2232.)

Also referred to by witnesses:

	Vol.	Page
Bunyard, James G. (R. 2166)	II	690
Bunyard, James G. (R. 2165)	II	695
Gardner, John (R. 285)	I	354
Marshall, John (R. 2234)	I	237
Marshall, John (R. 2233)	II	690
Witzel, John H. (1121)	I	192
Witzel, John H. (R. 1098)	I	383
Witzel, John H. (R. 1121)	I	507

Marshall, Sarah E., place.—During the year 1885 I filed a preemption and located on the east side of the Blitzen River near the Rocky Ford; and after I made the final proof on that and disposed of it, I lived down in the vicinity of the Sodhouse, most of the time on a place known as the Sarah E. Marshall place, where the Hill Brothers now live.—Rubin T. Hughet. (R. 2186.)

Also referred to by witnesses:

	Vol.	Page
Hughet, Rubin T. (R. 2179)	I	41
Springer, Alva (R. 2035)	I	469

Martin, Tex, place.—Mr. Tex Martin had a place east of the Alexander McKenzie place inside the (Neal) meander line over toward the Narrows. It was unsurveyed land, and it has not been surveyed to this day.—Fay Comegys. (R. 1426.)

Also referred to by witness:

	Vol.	Page
Comegys, Fay (R. 1427)	I	521

Narrows Bridge.—In 1892–1893 I was road supervisor of Harney County, for the north side of Malheur Lake; there was another man on the south side (R. 780) and we worked together building that bridge at the Narrows by district labor and subscription thrown in to help build it; there was no county contract on it. The bridge was built mostly in 1892. (Mr. COLLINS. It was started in 1892 and finished in 1893.)—Simon Lewis. (R. 781.)

Newell's Island.—In Mud Lake, in high water you could go out into those necks and lakes below, and land a boat across the island, over at Newell's Island.—Paul Ware. (R. 1322.)

Nine Mile Slough.—The Nine Mile Slough runs around Saddle Butte and spreads out and then runs into the Seventeen Mile Slough.—Thomas J. Vickers. (R. 262.)

Nine Mile Slough is on the east side of the lake near Saddle Butte; I think it is the same thing as the Malheur Slough.—William Hanley. (R. 1380–1381.)

The Nine Mile Slough goes into Malheur Slough.—John W. Heinz, (R. 1948.)

Also referred to by witnesses:

	Vol.	Page
Baker, Robert Dillard (R. 1076)	I	506
Biggs, John W. (R. 1487)	I	14
Brandon, James M. (R. 1003)	I	435
Darsey, John G. (R. 1764)	I	588
Darsey, John G. (R. 1959)	I	345
Darsey, John G. (R. 1964)	I	297
Fitzgerald, Maurice (R. 1787)	I	33
Heinz, John W. (R. 1937)	I	551
Heinz, John W. (R. 1948)	II	688
Kilburn, Campbell C. (R. 740)	II	684
Loggan, John Edward	II	942
Lucas, Martin Anderson (R. 430)	I	360
McKinnon, Robert J. (R. 812)	I	416
Vickers, Thomas J. (R. 262)	I	352

Oard, Charlie, Ranch.—See *Catterson, Ralph and Minnie place.* (The Ralph and Minnie Catterson place was formerly known as the Charlie Oard place, and this place is the one which lies the closest to Saddle Butte, in an L shape. The Ralph Catterson place was formerly known as the Noah Oard place, and is the closest to the (Lake Malheur) Bird Reserve.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Catterson, Ralph (R. 1706)	I	19	Venator, Alphena (R. 2324)	I	238

Oard, Noah, place.—See *Catterson, Ralph, place.*

(The Ralph and Minnie Catterson place was formerly known as the Charlie Oard place, and this place is the one which lies the closest to Saddle Butte, in an L shape. The Ralph Catterson place was formerly known as the Noah Oard place, and is the closest to the (Lake Malheur) Bird Reserve.)

Oil well (Howell).—The oil well is in lot 8, section 5, T. 26 S., R. 32 E.—Thomas J. Vickers. (R. 246–247.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Baker, Emil (R. 590)	II	642	Dalton, James M. (R. 611–612)	II	642

Oliver, Ed., place.—The Ed. Oliver place is located in the northeast quarter of section 30, T. 26 S., R. 31 E., south of the lake. The school house is probably located in the southwest corner of lot 12, same section, township, and range.—Pecore.

Also referred to by witness:

	Vol.	Page
Ware, Paul (R. 1323)	II	775

OO Ranch.—This ranch is along the northwesterly side of Silver Creek and Harney Lake.—Lee Minis Caldwell. (R. 156.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Baker, Emil (R. 587–588)	I	11	Hanley, William (R. 1350–1351)	I	36
Baker, Emil (R. 590)	II	642	Hanley, William (R. 1363)	II	717
Bardwell, Willis George (R. 948)	I	13	Hanley, William (R. 1365)	II	718
Caldwell, Lee Minis (R. 137)	I	16	Hanley, William (R. 1389)	II	950
Caldwell, Lee Minis (R. 144)	II	834	Jewett, Stanley G. (R. 2002)	II	959
Fitzgerald, Maurice (R. 1774)	I	32	Miller, Mrs. Emma (R. 1137)	II	813
Fitzgerald, Maurice (R. 1776)	I	392	Pecore, Chester W. (R. 121)	II	816
Fitzgerald, Maurice (R. (1823)	II	795			

Otley, Charles Property.—Plaintiff's Exhibit No. 22 shows Charles Otley as owning the east half of the northeast quarter of section 20, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Otley, Charles and Richard property.—Plaintiff's Exhibit No. 22 shows Charles and Richard Otley owning lots 3, 4, 5 and 6 of section 20, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Otley, Fred, jr., property.—Plaintiff's Exhibit No. 22 shows Fred Otley, jr., as owning the north half of the northeast quarter and the

northeast of the northwest quarter, and lots 2, 3, 7, 8 and 9 of section 21, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Otley, Henry, property.—There is a place known as the Otley Ranch on the north side of the (Lake Malheur) Bird Reserve.—Henry Otley. (R. 2207.)

Where Mr. Otley lives is the west half of the west half of section 16, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2208.)

I personally own 240 acres up there under fence besides some undivided land, estate land.—Henry Otley. (R. 2208.)

Plaintiff's Exhibit No. 22 shows Mr. (Henry) Otley owning lot 1, section 29, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Plaintiff's Exhibit No. 22 shows Henry Otley as owning the northwest quarter of the northwest quarter and lot 1, of section 21, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Otley, Henry (R. 2208).....	II	671	Otley, Henry (R. 2208).....	II	690

Otley, Henry, Charles, and Dick, property.—Plaintiff's Exhibit No. 22 shows Henry, Charles, and Dick Otley as owning lots 10 and 11 in section 21, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Otley, Henry and Dick, property.—Plaintiff's Exhibit No. 22 shows Henry and Dick Otley as being in possession of a strip of land a quarter of a mile wide and approximately three-quarters of a mile long, lying south of lots 3, 4, 5, and 6 of section 20, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Otley properties.—Plaintiff's Exhibit No. 22 shows the Otleys as being in possession (R. 2210) of a tract of land approximately a half a mile east and west, and an average width of a little more than a quarter of a mile north and south, lying south of lots 1 and 2 of section 29, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Drinkwater, Clarence W. (R. 1873).....	I	29	Otley, Charles (R. 2216).....	I	48
			Otley, Henry (R. 2212).....	II	695

Otley, Richard, property.—Plaintiff's Exhibit No. 22 shows Richard Otley as owning the west half of the northeast quarter, section 20, T. 25 S., R. 32½ E., north of the lake.—Pecore. (R. 2210.)

Peterson, Charles R., place.—The property that Mr. Peterson owned from 1910 to 1924 (R. 681) is just below, or inside the Neal meander line, about half a mile to the southwest of the Showen house.—Pecore. (R. 683.)

This place of mine is referred to by a lot of people as the Peterson place.—Charles R. Peterson. (R. 688.)

There was a log building which was built for a granary on what we call the Vickers place. (R. 688.) I bought the improvements from a man by the name of Vickers.—Charles R. Peterson. (R. 689.)

Also referred to by witnesses:

	Vol.	Page
Hayes, Marcellus B. (R. 1226)	I	451
Peterson, Charles R. (R. 680)	I	186
Peterson, Charles R. (R. 680)	I	604
Vickers, Thomas L. (R. 2310)	I	58

Peterson, C. R., place.—I and our family at one time lived down there below Ruh's (place), inside the boundary of the present (Lake Malheur) Bird Reserve, which was known as the Vickers place. The first time I was down there I was not very old. My brother and I came in possession of the ranch in the spring of 1905 (R. 2310) and we hayed and run our cattle in there until the spring of 1910, when we sold 500 head of cattle and the improvements on the ranch to C. R. Peterson. My brother and I were not married at the time we were living there, except my brother was married in the winter of 1909 and he lived there that winter with his family.

We had two houses, a granary, a barn, and weaning place for stock on that land. We had the usual outdoor equipment that goes with ranches around in this part of the country.

With reference to the condition of the fences: On the south side of this place there was no fence; it narrows off more as it goes in towards the east, and this high ground; and this, here [indicating on map, Plaintiff's Exhibit No. 3], we always called it the lake shore, and there was a pretty high rim next to the fence. The cattle would drift out into the lake all the time, from this shore out to the north fence [indicating]; and then running west to the Hayes corner, and then south back to the lake shore would be in the neighborhood of pretty close to 300 acres, I would judge; I never figured up on that.—Thomas L. Vickers. (R. 2311.)

Also referred to by witnesses:

	Vol.	Page
Dodge, Mott V. (R. 2475–2476)	II	635
Peterson, Charles R. (R. 680)	I	186

Potter's swamp field.—North of Wright's Point was a big bunch of tules known as Potter's Swamp land, with wild hay, when I came through.—George S. Sizemore. (R. 1654.)

Potter's Town.—This whole country, known as Potter's Town, was covered with tules east and south of Hines Mill.—George S. Sizemore. (R. 1654.)

Red S Ranch or Field.—The Red "S" Ranch or Field is located southeast and west of the Island Ranch, and it comprises about a township or a township and a half. It always had high grass on it until the last few years. The principal source of its water is from the Silvies River.—George E. Whiting. (R. 551.)

Mr. LILJEQVIST. Q. This Red "S" Field that you have referred to, would that go down to the meander line?

A. Possibly; I couldn't say. I suppose it does, though.—George E. Whiting. (R. 566.)

Mr. BLACKMAR. In connection with the testimony of Mr. Brown, I want the record to show that the Red S Field is three miles north of the Howell oil well.

SPECIAL MASTER. Where is it, between the east and the west forks of the Silvies River, is it within those points? (R. 1092.)

Mr. PECORE. I think it is entirely west. Isn't the Red S Field entirely west of the Silvies River on the south side?

Mr. BLACKMAR. Mr. Brown says the Red S Field starts right at the Island Ranch.

SPECIAL MASTER. And the Island Ranch is shown on this map (Plaintiff's Exhibit 3) as between the two forks of the Silvies River?

Mr. LILJEQVIST. Most of the Red S Field is west of the west branch of the Silvies River. I think that is correct.—Robert Hamilton Brown. (R. 1093.)

Red S Field.—I know the origin of the name Red S Field. (R. 1394.)

The S stands for a little red S that was marked on the maps in the settler's time, which was to designate swamp land, and the settlers named it "Red S." They acquired title to it under the swamp land act. The Red S Field lies southerly of Wright's Point. I think it lies between the rivers (east and west fork of the Silvies River).—William Hanley. (R. 1395.)

I know the origin of the Red S field. It is a township, practically a township that John Devine had fenced up when I came, and a lot more land. The words "Red S" designated swamp land; I don't know just exactly the origin, but anyway it (R. 1521) was called "Red S swamp land." There were no posts there with a red S on them. I never saw them.—Fred Haines. (R. 1522.)

The names given to the Red S Field is due to the fact that that section of the so-called Island Ranch were swamp lands, and were designated by the red letter S, and on plats where they show a red S, it (R. 1529) refers to the fact that that was swamp land.—James J. Donegan. (R. 1530.)

Also referred to by witnesses:

	Vol.	Page
Anderson, Edward (R. 1284)	I	454
Baker, Emil (R. 589)	I	375
Baker, Emil (R. 590)	II	642
Baker, Robert Dillard (R. 1082)	I	12
Baker, Robert Dillard (R. 1079)	II	658
Bardwell, Willis George (R. 952)	I	563
Brown, Robert Hamilton (R. 1084)	I	436
Brown, Robert Hamilton (R. 1092)	I	438
Clark, Emanuel (R. 1738)	I	463
Fry, George (R. 1127)	I	439
Donegan, James J. (R. 1529)	I	457
Haines, Fred (R. 1518)	I	456
Hanley, William (R. 1356)	I	387
Hayes, Marcellus B. (R. 1200)	I	444
Irving, Robert (R. 441)	I	362
Irving, Robert (R. 451)	I	364
Irving, Robert (R. 433–434)	II	649
Shepard, L. W. (R. 1293)	I	517
Thompson, Grant (R. 723)	I	409
Thompson, Grant (R. 724)	II	684
Whiting, George E. (R. 566)	I	374
Witzel, John H. (R. 1098)	I	383

Reed, Charlie, place.—Charlie Reed's house is located in the northeast quarter of the southwest quarter of section 28, and his fences extend from the west boundary of lot 2, of section 28 north about 200 yards, and east a half mile, and south a half mile from the meander line, and that section is in T. 26, R. 31 E., south of the lake.—Pecore; Edward Anderson. (R. 1282.)

Also referred to by witnesses:

	Vol.	Page
Anderson, Edward (R. 1283)	I	453
Anderson, Edward (R. 1288)	I	516
Comegys, Sidney (R. 1456)	I	205
Huffman, William David (R. 1574)	I	574

Reinemann house and place.—The old Reinemann place is in the southeast quarter of the southwest quarter of section 29, T. 26, S.; R. 31 East, south of the lake.—Pecore. (R. 532.)

The Reinemann house is in the southeast quarter of the southwest quarter of section 29, T. 26 S., R. 31 E., south of the lake.

The meander line touches the place at the (R. 1665) northeast corner of the southwest quarter of the northeast quarter of section 29, T. 26 S., R. 31 E., south of the lake.—Pecore; A. A. Reinemann. (R. 1666.)

The water on the Reinemann place comes from both ways (from the Blitzen River and from the Malheur Lake); it comes through the Curtis place, through the sloughs, and runs on the Reinemann place, and some water backs in there, too.

Mr. BLACKMAR. Q. Where this water comes from the Blitzen River and sweeps over that property does it sometimes gouge out kind of a slough?

A. Oh, no; there is just natural sloughs in there, but it won't wash out any. There is not enough current.

Some years the water recedes, it goes out; it does not run out; it gradually moves out.—Jeff Cawlfield. (R. 1890.)

The Reinemann Ranch is east of Mrs. Frank Dunn's place, and is marked on Plaintiff's Exhibit No. 3, "A. Reinemann" in the southeast quarter of the southwest quarter of section 29, T. 26 S., R. 31 east, south of the lake.—Pecore; John H. Witzel. (R. 1103.)

Also referred to by witnesses:

	Vol.	Page
Anderson, Edward (R. 1284)	I	454
Cawlfield, Jeff (R. 1888)	I	222
Cawlfield, Jeff (R. 1889)	I	545
Cawlfield, Jeff (R. 1902)	I	548
Cawlfield, George W. (R. 1903)	I	550
Cawlfield, Jeff (R. 1888)	II	664
Cawlfield, Jeff (R. 1889)	II	688
Fry, George (R. 1126)	I	439
Hanley, William (R. 1384)	I	518
Hughet, Rubin T. (R. 2184)	I	476
Marshall, Alfred L. (R. 2075)	I	557
Mothershead, Samuel T. (R. 2175)	I	558
Ortego, Prim (R. 531)	I	370
Reinemann, A. A. (R. 1664)	I	50
Reinemann, A. A. (R. 1665)	I	209
Reinemann, A. A. (R. 1664)	I	530
Sizemore, George S. (R. 1651)	I	208
Springer, Alva (R. 2016)	I	466
Witzel, John H. (R. 1122)	I	193
Witzel, John H. (R. 1099)	I	383

Rocky Ford Lane.—The Rocky Ford Lane is situated immediately south of the Big Sagebrush Field; that was an old rock ford where the (Blitzen) river broadened out; it was the only place you could ford the river; when you crossed the ford and traveled toward the northwesterly side, around Rattlesnake Butte, you would come across the old west fork of the Blitzen called McLaughlin Slough.—Prim Ortego. (R. 528.)

I am familiar with Rocky Ford Lane.—Maurice Fitzgerald. (R. 1807.)

(NOTE.—Rocky Ford Lane runs east and west along the south line of sections 15, 16, 17 and 18, township 28 S., R. 31 W., Willamette Meridian, as shown on map prepared by Division of Agriculture Engineering Bureau of Public Roads, United States Department of Agriculture, May, 1931, showing the Eastern Oregon Livestock Company's lands from mile south of Rocky Ford to Sodhouse Lane, and filed as an exhibit in the matter of the adjudication of the waters of the Blitzen River now pending before the State Engineer of Oregon, said exhibit prepared under the direction of Mr. L. T. Jessup.)

Ruh, Herman, place.—This place is located in section 25, T. 25 S., R. 32 E., and is known as the Herman Ruh place.—Collins. (R. 749.) This was the place that Louis Woldenburg homesteaded in 1891. (R. 749.)

Also referred to by witnesses:

	Vol.	Page
Alberson, Jesse O. (R. 1276)	I	515
Catterson, Frank (R. 1190)	I	511
Clark, Julia Ann (R. 1006)	I	496
Clark, William Joseph (R. 1041)	I	626
Hayes, Marcellus B. (R. 1230)	I	451
Hayes, Marcellus B. (R. 1227)	II	623
Heinz, John W. (R. 1944)	I	552
Loggan, John Edward	II	654
Vickers, Thomas L. (R. 2310)	I	58
Woldenburg, Louis (R. 749–751)	II	65

Ruh, Herman (estate), place.—In 1893 or 1894 I went to live with by brother on a place that he took up that was then known as the Showen place, and which now belongs to the Herman Ruh estate. It is north of the George Thompson place.

I think the Neal meander line cut the place in two; but the majority of it was below.—Ora Winfield Hill.

Mr. PECORE. The Showen house is marked here (on the map, Plaintiff's Exhibit No. 3) in lot 1, section 31, T. 25 S., R. 32½ E.; and the east boundary of the southern end of the Ruh property above the meander line is just a few hundred feet west of the Showen house. The Ruh property extends away back up here at the present time through section 30, T. 25 S., R. 32½ E.; and then over into section 25, T. 25 S., R 32 E., north of the lake.

The Ruh house is near the line of sections 24 and 25, T. 25 S., R. 32 E.—Pecore (R. 1538).

Also referred to by witnesses:

	Vol.	Page
Bunyard, Le Roy (R. 1147, 1163)	I	193
Clark, Joseph William (R. 1038)	I	192
Clark, Joseph William (R. 1035)	I	503
Clark, Julia Ann (R. 1015)	I	499
Hill, Ora Winfield (R. 1548)	I	325
Hill, Ora Winfield (R. 1537–1538)	I	527
Woldenburg, Louis (R. 750)	I	480

School house, near Ed. Oliver place.—The Ed. Oliver place is located in the northeast quarter of section 30, T. 26 S., R. 31 E., south of the lake. The schoolhouse is probably located in the southwest corner of lot 12, same section, township, and range.—Pecore.

School, Simon Lewis district.—The school at which Mrs. Effie L. Dunn taught in the Simon Lewis district has been described by Mr. Scott Haley as being three-quarters of a mile from his present home.

It was pretty close to the patented Creasman property which, as shown on Plaintiff's Exhibit No. 21 is located in the northeast quarter of the northwest quarter, and lots 2, 3, 6, and 7, section 18, T. 26 S., R. 32 E., north of the lake.—Pecore, Mrs. Effie L. Dunn. (R. 848.)

School, Springer or Sodhouse district.—That schoolhouse is a little east of where Mr. Benson, the Warden of the Government Reservation, now lives, near the Sodhouse Spring.—Mrs. Effie L. Dunn. (R. 845.)

Also referred to by witness:

	Vol.	Page
Dunn, Mrs. Effie L. (R. 855)	I	189

Sebring, George, place.—See *Spurlock, Alvin C. and Charles A., house.* (R. 1768.)

Showen place.—The Showen place is in lot 1, section 31, T. 25 S., R. 32½ E.—Pecore, C. R. Peterson. (R. 683.)

I do not know whether the Showens had some land south of them that they cut hay on, because I was not familiar with their land except to be at their house the one time.—Mrs. Julia Ann Clark. (R. 1012.)

In 1893 or 1894 I went to live with my brother on a place that he took up that was then known as the Showen place, and which now belongs to the Herman Ruh estate. It is north of the George Thompson place.

I think the Neal meander line cut the place in two; but the majority of it was below.—Ora Winfield Hill.

The Showen house is marked here (on the map, Plaintiff's Exhibit No. 3.) in lot 1, section 31, T. 25 S., R. 32½ E; and the east boundary of the southern end of the Ruh property above the meander line is just a few hundred feet west of the Showen house. The Ruh property extends away back up here at the present time through section 30 T. 25 S., R. 32½ E; and then over into section 25, T. 25 S., R. 32 E.; north of the lake.

The Ruh house is near the line of sections 24 and 25, T. 25 S., R. 32 E.—Pecore (R. 1538).

Also referred to by witnesses:

	Vol.	Page
Clark, Mrs. Julia Ann (R. 1011)	I	498
Culp, Lloyd B. (R. 1854)	I	219
Culp, Lloyd B. (R. 1854)	I	609
Culp, Lloyd B. (R. 1855)	II	703
Hayes, Marcellus B. (R. 1207)	I	194
Hayes, Marcellus B. (R. 1207)	I	445
Hill, Ora Winfield (R. 1541)	II	661
Heinz, John J. (R. 1679)	I	532
Heinz, John J. (R. 1682-1683)	II	661
Hill, Ora Winfield (R. 1547)	I	325
Hill, Ora Winfield (R. 1541)	II	661
Peterson, Charles R. (R. 680)	I	604

Simmons, George Washington, place.—My place is owned by Frank Dunn now.

The old Simmons house is about a mile right north of where Pete Caldwell now lives.—George Washington Simmons. (R. 1749.)

The old T. Simmons house is in the northwest quarter of section 33, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 1749.)

Simmons place.—After my father sold out his place, they moved down on the south side of the (Malheur) lake to where my brother rented some land. The place that my brother rented on the south side of the (Malheur) lake was known as the Simmons place. My brother had another ranch but I can not recall the name of it just now. (R. 1886.)

There are one or two sloughs on the Simmons place.—Jeff Cawlfield. (R. 1890.)

I did not live down by what really is Lake Malheur; we lived very near the swamp on the Simmons place.

The Simmons house is in the northwest quarter of sections 33, T. 26 S., R. 31 E., south of the lake.—Isora Cawlfield. (R. 1911.)

Also referred to by witnesses:

	Vol.	Page
Cawlfield, Mrs. Isora (R. 1911)	I	19
Cawlfield, Jeff (R. 1901)	I	547
Elliott, Cortis E. (R. 1051)	I	505
Hembree, John L. (R. 892)	I	422
Simmons, George Washington (R. 1749)	I	215
Simmons, George Washington (R. 1750)	II	656
Witzel, John H. (R. 1142)	I	192
Witzel, John H. (R. 1102)	I	384

Simmons Ranch.—The Simmons Ranch that I lived on joins the John Marshall place immediately west; I am not sure, but I think it is owned by the Hill Brothers.—John H. Witzel.

From his description, it would be in the northwest quarter of section 34, T. 26 S., R. 31 E., south of the lake.—Pecore. (R. 1106.)

Sims' place.—Reference is made to the *Comegys, Sidney, place.* (R. 1455.)

The old Sims place was in between the two meander lines (the 1877 meander line, and the Neal meander line of 1895); it does not join the (Neal) meander line on the north. I was back and forth through the Sims place before my father bought it; I do not know just what year he did buy it.—James G. Bunyard on cross-examination. (R. 2168.)

Sizemore, Eph., place.—This place, which is located down on Harney Lake, can be identified on the map, Plaintiff's Exhibit No. 4, and the place is situated in the southwest quarter of section 10, T. 27 S., R. 29 E. That is where the old stone house was.—Pecore; George H. Bollenbaugh. (R. 1397.)

Also referred to by witness:

	Vol.	Page
Miller, Mrs. Emma (R. 643)	II	809

Sizemore Ranch.—This ranch is located on the southwest side of Harney Lake and is indicated on the map, Plaintiff's Exhibit No. 4. It is located about the middle of the south boundary of the southwest quarter of section 10, T. 27 S., R. 29 E.—Pecore. (R. 643.)

Smith, Richard A. (Dick), place.—It is located in lots 2 to 6, inclusive, of section 33; and the southeast quarter of the southeast quarter of section 32, T. 26 S., R. 30 E., south of the lake.—Pecore; Richard A. Smith. (R. 1299.)

Also referred to by witness:

	Vol.	Page.		Vol.	Page
Ware, Paul (R. 1315)	I	59	Ware, Paul (R. 1315)	II	790
Ware, Paul (R. 1306–1308)	II	775	Ware, Paul (R. 1325)	II	1010

Smyth, D. H., house in bed of Malheur Lake.—The house is situated about an inch on the map (Plaintiff's Exhibit No. 3) northeast of the figure 3 in lot 3, section 28, T. 26 S., R. 31 east, south of the lake.—Pecore—Darius Hynson Smyth. (R. 460.)

Also referred to by witness:

	Vol	Page
Smyth, Darius Hynson (R. 459)	II	639

Smyth D. H. (Rye), place.—When my father moved over to the place my brother rented, I did not move over there with them.

I lived over there (on the south side of Malheur Lake); I owned a ranch over there, which I acquired in the fall (R. 1886) of 1900 (R. 1887).

I think it is known as the Smyth place now. I traded it to my brother (Frank Cawlfield) and he sold it to D. H. (Rye) Smyth.

SPECIAL MASTER. That was the property of which he was the owner in Cawlfield versus Smyth in 69 Oregon 41?

A. Yes. (R. 1886.)

SPECIAL MASTER. And it is described as certain factional subdivisions of sections 27 and 28, township 26 south, range 31, east of the Willamette Meridian. Is that where it is?

Mr. PECORE. Yes.

The fractional subdivisions are lots 3 and 4, of section 27, and lot 4 of section 28, T. 26 S., R. 31 E., south of Malheur Lake.—Jeff Cawlfield. (R. 1887.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Baker, Emil (R. 603)	I	316	Smyth, Corey E. (R. 1256)	I	207
Cawlfield, Jeff (R. 1885)	I	245	Smyth, Corey E. (R. R. 1522)	I	569
Cawlfield, Jeff (R. 1886)	I	544	Smyth, Corey E. (R. 1524)	II	666
Cawlfield, Jeff (R. 1889)	I	547	Smyth, D. H., jr. (R. 1463)	I	567
Darsey, Mrs. Ollie (R. 649)	II	703	Smyth, D. H., jr. (R. 1466)	II	703
Smith, D. H., jr. (R. 1467)	I	206	Witzel, John H. (R. 1116)	I	385
Smith, Mrs. Fannie (R. 1068)	II	665			

Smyth, Sylvester (Coon) place.—Mr. Coon Smyth had a cabin on his place about four miles west, and about half a mile north of the house in which I lived. Mr. Coon Smyth is not the same man who is known as Hog Smyth. (R. 1425.) The house in which I lived was about quarter of a mile east of where the Hill Brothers house is located.—Fay Comegys. (R. 1423.)

The Hill Brothers house now is in the north half of the northeast quarter of section 34, T. 26 S., R. 31 E.—Pecore. (R. 1423.)

Coon Smyth's house was around close to the Albert Reinemann place.

Mr. LILJEQVIST. Q. Close to the Albert Reinemann place?

A. Yes.

Q. That is on surveyed land? A. Yes.

Q. Sylvester Smyth had surveyed land on the south side of the lake, didn't he?

A. I think his came under the Neal survey, didn't it?

Q. Yes; in other words, between the first (1877) and second (Neal) meander.

A. I think that is right; I ain't sure.—Fay Comegys. (R. 1436.)

Also referred to by witness:

	Vol.	Page
Comegys, Fay (R. 1435)	I	523

Sodhouse.—My nephew, Mr. Chapman, and Mr. Weaver built the Sodhouse near Sodhouse Springs; my nephew and Weaver lived there; I think the Sodhouse was built in 1874, the year we went over there.—Tobias Stilley Riddle. (R. 544.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Smyth, George A. (R. 668)	II	650	Whiting, Schuyler (R. 170)	I	61

Sodhouse Field.—South of Sodhouse Lane, the old Meldrum meander line, is what is called the Sodhouse Field; it was a big area in there that Peter French acquired, about two miles from the Meldrum meander line of 1877; it might have been two miles more or less, I can not tell you; that is what they called the Sodhouse Field; they called that swamp land.—Prim Ortego. (R. 527.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Baker, Robert Dillard (R. 1079)	I	507	Cawlfield, Jeff (R. 1888)	I	545
			Whiting, George E. (R. 555)	I	372

Sodhouse Lane or Meander Line Road.—That is the road that runs from the old sodhouse to the Narrows.—Prim Ortego. (R. 530.)

The line I am talking about was the Sodhouse Lane which was called the Meander Line Road; the meander line of 1877.—William Hanley. (R. 1355.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Hanley, William (R. 1375)	I	390	Smyth, Darius Hyneon (R. 475-476)	I	140
King, Will Y. (R. 317)	I	357			
Ortego, Prim (R. 522)	I	141			

Sodhouse Ranch.—Sodhouse Ranch is south and west of the Sodhouse Springs.—Schuyler Whiting. (R. 180.)

Also referred to by witnesses:

	Vol.	Page
Clark, Emanuel M. (R. 1739)	I	617
Clark, Emanuel M. (R. 1736)	I	20
McKinnon, Robert J. (R. 811)	I	46

Sodhouse Spring.—I have heard a lot of statements that the Sodhouse Spring, or Springer's Spring, was discovered by Peter French swimming in the lake, but I did not believe them all.—John Gardner. (R. 288.)

Also referred to by witnesses:

	Vol.	Page
Benson, George M. (R. 2507)	II	724
Brown, Arnsted Ealsworth (R. 2177)	I	475
Brown, Robert Hamilton (R. 1085)	I	436
Catterson, Frank (R. 1185)	I	512
Catterson, Ralph (R. 1708)	II	729
Dunn, Effie L. (R. 863)	I	493
Dunn, William J. (R. 826)	I	418
Fry, George (R. 1123)	I	438
Fry, George (R. 1145)	I	442
Fry, George (R. 1132)	II	726
Gardner, John (R. 267)	I	354
Gardner, John (R. 285)	II	724
Hanley, William (R. 1375)	II	728
Hembree, John L. (R. 888)	I	421
Hibbard, Dr. Llewellyn Eugene (R. 1641)	I	580
Jewett, Stanley G. (R. 2004)	II	1014
Ortego, Prim (R. 522)	I	369
Ortego, Prim (R. 522)	II	724
Otley, Henry (R. 2214)	I	346
Otley, Henry (R. 2214)	I	600
Parker, Walter B. (R. 877)	II	725
Pecore, Chester W. (R. 89)	I	612
Riddle, Tobias Stilley (R. 538)	I	370
Riddle, Tobias Stilley (R. 539)	II	641
Riddle, Tobias Stilley (R. 544)	II	725
Shirk, Joseph Logan (R. 939)	I	494
Sizemore, George S. (R. 1655)	I	458
Sizemore, George S. (R. 1650)	I	327
Smyth, Mrs. Fannie (R. 1070)	II	665
Springer, Alva (R. 2036)	I	469
Springer, Alva (R. 2022–2023)	II	730
Springer, Alva (R. 2026)	II	740
Triska, Francis W. (R. 2197)	I	58
Whiting, Frank (R. 194)	I	349
Whiting, Frank (R. 192)	I	398
Whiting, Frank (R. 192)	II	724

Sodhouse or Springer's Spring—Elevations.—The elevation of the top of the rock (in the Spring) is 4,095.7 feet, and the top of the highest water mark on the rock is 4,094.6 feet; the difference between 4,095.7 feet and 4,094.6 feet being practically 1.1. The elevation of the ground at the base of the rock is 4,093 feet, even. The level of the ground at the spring is lower. I have not been able to get the elevation of the dam.—Pecore. (R. 1688.)

Also referred to by witnesses:

	Vol.	Page
Benson, George M. (R. 2524)	II	732
Dunn, William J. (R. 834)	I	419
Dunn, William J. (R. 826)	II	651
Hembree, John L. (R. 894)	II	986
Hembree, John L. (R. 892)	I	423
Huffman, William David (R. 1588)	I	577
Kado, Joseph (R. 2048)	I	116
Ortego, Prim (R. 529)	II	1006
Parker, Walter B. (R. 877)	II	726
Sizemore, George S. (R. 1656)	I	459
Springer, Alva (R. 2034)	I	469
Smyth, George A. (R. 671)	II	650
Smyth, George A. (R. 671)	II	651
Triska, Francis L. (R. 2197)	II	1005

Springer, Alva, homestead.—My homestead lay west of my father's homestead.—Alva Springer. (R. 2085.)

Final certificate No. 807 was issued by the Government on January 26, 1903, to Alva Springer for lots 5 and 6, section 34; lots 7 and 8, and the southeast quarter of the northwest quarter of section 35, all in T. 26 S., R. 32 E., south of Malheur Lake.—Pecore.

Springer, Alva, place.—This is the place that is the Reservation Headquarters, and so shown on the map (Plaintiff's Exhibit No. 3). It is located in lot 4, section 35, T. 26 S., R. 31 E.—Mr. Pecore. (R. 611.)

I own certain property down there at the (Malheur) lake, and I have done so for a great many years.—Alva Springer. (R. 2016.)

Mr. BLACKMAR. Has your honor got the Springer property in mind?

SPECIAL MASTER. Oh, yes. It is down where the Spring is, isn't it?

Mr. BLACKMAR. Yes. (R. 2016.)

Mr. Springer owns lots 5 and 6, section 34; lots 5, 6, 7, 8; the southeast quarter of the northwest quarter, and the south half of the northeast quarter, and the northwest quarter of the northeast quarter, all in section 35, T. 26 S., R. 31 E.—Pecore.

Also referred to by witnesses:

	Vol.	Page
Baker, Emil (R. 591)	I	375
Baker, Emil (R. 590)	II	642
Benson, George M. (R. 2510)	II	999
Comegys, Fay (R. 1422)	I	520
Comegys, Fay (R. 1424)	I	521
Dalton, James M. (R. 610-611)	I	378
Hembree, John L. (R. 896)	II	652
Smyth, Mrs. Fannie (R. 1070)	II	665
Springer, Alva (R. 2016)	I	54
Springer, Alva (R. 2020)	II	694

Springer, Louis B., homestead.—This place at the (Sodhouse or Springer's) Spring that lay south of the John Marshall place was my father's homestead (R. 2034), and my homestead lay west of that. My father's homestead was patented to him by the Government, and I bought it from him after he got his patent.

That makes it 317 and a fraction acres, if I remember right, in the two places.—Alva Springer. (R. 2035.)

Final certificate No. 809 was issued on January 29, 1903, to Louis B. Springer (Mr. Alva Springer's father) for the west half of the northeast quarter, and the southeast quarter of the northeast quarter, and lots 5 and 6, all in section 35, T. 26 S., R. 31 E., south of Malheur Lake.—Pecore.

Springer's place.—Springer's Ranch, the place where Alva Springer now lives, called the Springer's place, is in lot 8, section 35, T. 26 S., R. 31 east, south of the lake.—Pecore. (R. 591.)

Also referred to by witnesses:

	Vol.	Page
Alberson, Jesse O. (R. 1276)	I	453
Benson George M. (R. 2530)	II	636
Biggs, John W. (R. 1488)	II	733
Dalton, James M. (R. 610-611)	I	378
Hughet, Rubin T. (R. 2184)	I	476
Kado, Joseph (R. 2048)	I	43
Shirk, Joseph Logan (R. 944)	II	701
Smith, Phillip Gordon (R. 1746)	I	609
Smyth, Phillip Gordon (R. 1747)	I	144
Smyth, George A. (R. 671)	I	402
Witzel, John H. (R. 1100)	I	384

Springer's (Ed.) place.—The Ed. Springer place is where Alva Springer lives, and is located in lot 8, section 35, T. 26 S., R. 31 E.—Mr. Pecore. (R. 611.)

Also referred to by witness:

	Vol.	Page
Dalton, James M. (R. 610–611)	I	378

Spurlock, Alvin C. and Charles A., house.—My brother and I own jointly some property down near Malheur Lake.—Alvin C. Spurlock. (R. 1753.)

The Spurlock house is situated in the northeast quarter of the southeast quarter of section 19, T. 25 S., R. 32½ E.—Pecore. (R. 1753.)

I was not living on that place (in the northeast quarter of the southeast quarter of section 19, T. 25 S., R. 32½ E.) at the time Mr. Neal ran his line. We bought that property in 1898.—Alvin C. Spurlock. (R. 1753.)

I have a place up on the north side of Malheur Lake, which I purchased in the fall of 1888. (R. 1763.) That is the place that my brother has just testified about. It is in sections 8 and 9, T. 25 S., R. 32½ E.—Charles A. Spurlock. (R. 1764.)

Cross-examination:

I bought that place of mine in 1898, and George Sebring owned it before that.—Charles A. Spurlock. (R. 1768.)

Spurlock, A. and C., house.—The A. and C. Spurlock house, as it is now sitting is in the southern portion of lot 5, section 19, T. 25 S., R. 32½ E.—Pecore, Frank Catterson. (R. 1193.)

Also referred to by witness:

	Vol.	Page
Catterson, Frank (R. 1193)	I	512

Spurlock, Charles A., homestead.—My brother has a homestead that extends down to the Neal meander line. That homestead lay south of the place we own jointly, and it is in lot 8, section 30 (T. 25 S., R. 32½ E., north of the lake).

My brother was not on his homestead at the time that Mr. Neal ran his meander line through there; he had not taken it up or acquired it at that time.—Alvin C. Spurlock. (R. 1754.)

In addition to that property (sections 8 and 9, T. 25 S., R. 32½ E.) I have taken a homestead lower down on the (Malheur) lake. They call it the lower place.—Charles A. Spurlock. (R. 1764.)

Also referred to by witnesses:

	Vol.	Page
Spurlock, Charles A. (R. 1763)	I	56
Spurlock, Alvin C. (R. 1755)	I	216
Spurlock, Charles A. (R. 1765)	I	216
Spurlock, Alvin C. (R. 1759)	I	537
Spurlock, Alvin C. (R. 1755)	II	693
Spurlock, Charles A. (R. 1764)	II	702

Spurlock place.—I lived on the Spurlock place one year; that was deeded land, north of the meander line.—James A. Turner. (R. 1734.)

I had the Spurlock place.—Alphena Venator. (R. 2322.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Culp, Lloyd B. (R. 1848)	I	609	Culp, Lloyd B. (R. 1849)	II	673
Culp, Lloyd B. (R. 1847)	I	25			

Square Well Field.—North of the Red "S" Field is another one called "Square Well Field," and I should think the Red "S" and the Square Well Fields would be mixed up a little.—William Hanley. (R. 1395.)

Stauffer corral.—The Stauffer corral I believe stood between Saddle Butte and Windy Point, nearer Windy Point than Saddle Butte.—Campbell C. Kilburn. (R. 740.)

In the early days, I had occasion from time to time to pass Windy Point; I remember a place up there which is known as the Stauffer corral. The Stauffer corral was located a little north of west of Windy Point.

I recall the old county well up there, and the Stauffer corral was west and quite a bit north of that well, but I could not say how far. That well was dug after the corral was up. (R. 1469.) There was no well there, I did not pay much attention how far it was at the time. The well was right close to Windy Point, right close to the hill. The corral was about half a mile north from the hill.

I recall about a foot and a half bank, step-off, up there at that particular location (near Windy Point). That corral was about 50 yards east of that bank. The corral was used to brand calves in.—Marion Horton. (R. 1470.)

The location of the corral with reference to the well (Windy Point) I remember the corral best when it was moved out, and I understand built on the salt grass, but it has been moved east out to the edge of the sagebrush on the old road that runs from Windy Point to Crow Camp. The corral was due north from the old well, about a mile, or a mile and a half north of Windy Point.

I remember sort of a little bank out towards the (Malheur) lake. (R. 1813) at Windy Point. With reference to the location of that (Stauffer) corral to that bank, the corral was quite a ways out after it was moved out in the sagebrush along this road. It was moved farther out east from the lake. When it was moved out, it might have been three-quarters of a mile, more or less, from that bank.—John R. Jenkins. (R. 1814.)

I remember a corral called the Stauffer corral at Windy Point. (R. 2179.) I can not give you the exact location of it, but I can give you the approximate location of it.

The corral was situated near the cut bank on the east border of Malheur Lake, at a distance not to exceed 100 yards from the bank, and west, or northwest of Windy Point. I recently examined the ground in an endeavor to find the exact location, but I was not able to find any trace of the corral.

I first saw that corral about the 10th or 12th of June, 1885; and I think it was moved from there about the year 1887; that is, the remains of it, or what was left of it.—Rubin T. Hughet. (R. 2180.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Hughet, Rubin T. (R. 2179)	I	475	Kilburn, Campbell C. (R. 739)	I	412
Hughet, Rubin T. (R. 2182)	II	657	Parker, Walter B. (R. 879)	I	421
Hughet, Rubin T. (R. 2180)	II	700	Thompson, Orin Eugene (R. 1506)	I	569
Horton, Marion (R. 1469)	I	381			
Jenkins, John R. (R. 1812)	I	382			

Swan Lake.—Swan Lake is between lots 11 and 12, section 4, T. 26 S., R. 32 E.—Thomas J. Vickers. (R. 246–247.)

Mr. BLACKMAR. Q. This place known as the Swan Lake Field has been referred to by some of the witnesses. What is meant by that?

A. It used to be a lake in there, I suppose, before it went dry; there used to be a lot of swans in there.—A. A. Reinemann.

Mr. PECORE. Swan Lake is marked on the map (Plaintiff's Exhibit 3) and the fences bounding Swan Lake Field are on there and can be identified. What is known as Swan Lake is between lots 10 and 12 of section 4, T. 26 S., R. 32 E., north of the lake. (R. 1673.)

Probably about nine or ten miles I guess south of Wright's Point there is a little lake we call Swan Lake, and there is a little bank on the east side of that lake.—Alphena Venator. (R. 2327.)

Also referred to by witness:

	Vol.	Page
Smith, Phillip Gordon (R. 1743)	I	608

Swan Lake Field.—Mr. PECORE. I do not think the Swan Lake Field is identified, but what I understand is known as Swan Lake is located right near Vickers' house. (R. 962.) Swan Lake has been located on Plaintiff's Exhibit No. 3.—James M. Brandon. (R. 996.)

Mr. BLACKMAR. Q. This place known as the Swan Lake Field has been referred to by some of the witnesses. What is meant by that?

A. It used to be a lake in there, I suppose, before it went dry; there used to be a lot of swans in there.—A. A. Reinemann.

(NOTE.—Swan Lake is marked on the map (Plaintiff's Exhibit 3) and the fences bounding Swan Lake Field are on there and can be identified.)

The Swan Lake Field fence at the Neal meander line commences at about the northeast corner of lot 10, section 3, T. 26 S., R. 32 E., and then goes in a southwesterly direction about a half mile, and then almost due south pretty nearly a mile; thence west about three-

eighths of a mile; thence northwest about half a mile; thence (R. 1673) southwest about three-fourths of a mile; thence west probably three-fourths of a mile; thence northwest less than a half mile, and thence north along the line between sections 17 and 18, of T. 26 S., R. 32 E. That is the portion of the area within the Neal meander line of what is known as Swan Lake Field.—Pecore. (R. 1674.)

Also referred to by witnesses:

	Vol.	Page
Marshall, Alfred L. (R. 2074)	I	557
Reinemann, A. A. (R. 1671)	I	531
Venator, Alphena (R. 2321)	I	59
Venator, Alphena (R. 2321)	I	602
Whiting, George E. (R. 556)	I	372

Taylor ridge.—I do not know whether or not you have it marked that way on the map (Plaintiff's Exhibit 3); it is east of my father's old place there (the Alexander McKenzie place). I know where Red Campbell's place is located. (R. 2149.) The Taylor ridge would be west of Campbell's place, but I do not know just exactly how far. It was east of my father's place and west of Campbell's place.—Wm. Henry McKenzie. (R. 2150.)

Mr. PECORE. Mr. Campbell's place is shown on this map (Plaintiff's Exhibit 3), as "Campbell," and it is about a mile south of the northeast corner of section 17, T. 26 S., R. 32 E. His (Wm. Henry McKenzie) father's house is shown here (on the map, Plaintiff's Exhibit 3), as "A. McKenzie," and it is in the west half of the northeast quarter of section 26, T. 26 S., R. 31 E. (R. 2150.)

I can not locate it exactly; but it is between those two holdings.—Wm. Henry McKenzie. (R. 2150.)

The "Island."—After we got through haying we would come up here to "The Island" where we generally had a place and stay a while until we got our cattle together, and then we would go down to the end of the (Malheur) lake, and winter down there.

Mr. BLACKMAR. Q. By the "Island," you mean that place on the north side of the lake between certain prongs of the Silvies River?

A. No. What they call the Island here, about seven miles below the Bell A ranch.

Q. It is near what is known as the Island Ranch? (R. 2163.)

A. It is just above the Island Ranch.—James G. Bunyard. (R. 2164.)

Also referred to by witness:

	Vol.	Page
Dalton, James M. (R. 608)	I	26

Thomas, Z. L., place.—I do not remember so well about his place, but he had one in there some place in the general vicinity of Haley and Campbell.—Grant Thompson. (R. 711.)

Thompson, George, place.—George Thompson's house, or place, was close to the mouth of the Silvies River, about a mile, or possibly more, from the Neal meander line, and below it; it would be some distance from the other places I have described.—Grant Thompson. (R. 711.)

The place that we had was known as the George Thompson place and it was located just south of the Herman Ruh place.—Mrs. Julia Ann Clark. (R. 1005.)

The George Thompson place is located right south of section 31, T. 25 S. R., 32½ E. The north end of this property abuts on the Neal meander line and it extends south just about an even mile; that is, the land extends from the Neal meander line for a mile south into the bed of Malheur Lake.—Pecore. (R. 1005.)

There were improvements on that place when we moved in there, and they consisted of two houses. A small house that we used for store-room and then a dwelling house; there was also a log house bordering the lake edge, which we used for a granery; there was a shed barn that ran (R. 1005) north and south; I don't know whether it joined into the log building or not, but it was right near it. It doesn't seem to me that the large house was a very new one; it was just a one-story building. I have been told that Mr. George Thompson, who owned the place, had built the house. I do not know who built the log house down at the other end of that place. (R. 1006.)

Cross-examination:

Mr. LILJEQVIST. Q. How far was your house inside of the Neal meander line?

A. All I know about the Neal meander line is just what I heard Mr. Pecore say now that it was a mile north of our place, and our house was, I should judge, 100 feet—maybe a little more or a little less than that—from the water's edge; it was right on the water's edge. (R. 1014.)

To the best of my knowledge we were located about a hundred feet inshore from the south line; the north line of the property was on the meander line.

SPECIAL MASTER. And her south line was about a mile below?

Mr. PECORE. Yes, according to the way the property is now.

I do not know whether the house was as far down as the fence, but it was perhaps a hundred feet from the water's edge; it might possibly be more or less than that. I do not know the acreage, nor the length of the north and south fence line.—Mrs. Julia Ann Clark: (R. 1014–1015.)

In connection with Mr. Clark's testimony, I desire to call attention to the fact that Plaintiff's Exhibit No. 3 shows that the elevation of the house (George Thompson's place) is between 4,094 and 4,095 feet.—Pecore. (R. 1041.)

The George Thompson place lies south of section 31, T. 25 S., R. 32½ E. That would be the house that is shown about 2½ inches on the map (Plaintiff's Exhibit No. 3), south of the Neal meander line. I think Vickers had it, and Ruh has the place now.—Pecore; Le Roy Bunyard. (R. 1151–1152.)

The George Thompson place (R. 1271) was up on an island, on which I cut hay for two years, 1898 and 1899. (R. 1272.)

Cross-examination:

There was a small island there at the George Thompson place, and it may have been about 100 acres in area. (R. 1277.) Jesse O. Alberson.

Also referred to by witnesses:

	Vol.	Page
Alberson, Jesse O. (R. 1271–1273)	I	322
Alberson, Jesse O. (R. 1271)	I	515
Alberson, Jesse O. (R. 1276)	I	515
Alberson, Jesse O. (R. 1273	II	980
Anderson, Edward (R. 1284)	I	454
Bunyard, LeRoy (R. 1147, 1163)	I	193
Bunyard, LeRoy (R. 1153)	I	319
Bunyard, LeRoy (R. 1151)	I	507
Bunyard, LeRoy (R. 1168)	II	659
Bunyard, Le Roy (R. 1147–1148)	II	978
Bunyard, LeRoy (R. 1157)	II	717
Clark, William Joseph (R. 1037)	I	500
Clark, Julia Ann (R. 1012)	II	658
Clark, Joseph William (R. 1031)	II	976
Hayes, Marcellus B. (R. 1198)	I	194
Hayes, Marcellus B. (R. 1206)	I	445
Hill, Ora Winfield (R. 1538)	I	527
McGowan, Archie (R. 1572)	I	282

Thompson, Grant, place.—Grant Thompson's place is located on lots 4, 5, and 6, of section 22, T. 25 S., R. 32½ E., shown on Plaintiff's Exhibit No. 3.—Pecore. (R. 725.)

Thompson, Orin Eugene, place.—This place is located in section 18, T. 26 S., R. 34 E.; which is across the road from section 13. It is shown on the map, Plaintiff's Exhibit No. 3, approximately by Windy Point. His place is about three-quarters of a mile, about 60 degrees east from the southeast corner of Windy Point.—Pecore. (R. 1506.)

Also referred to by witness:

	Vol.	Page
Thompson, Orin Eugene (R. 1515)	II	893

Thompson, Sarah E., place.—The Sarah E. Thompson place was located down near the Richard A. Smith place on the south side of Mud Lake.—Paul Ware. (R. 1317.)

Also referred to by witness:

	Vol.	Page
Ware, Paul (R. 1325–1326)	II	791

Cross-examination:

I lived on the land owned by Mrs. Sarah E. Thompson down in the northwest corner of Mud Lake; more on the north slope of it; the land was patented to William E. Bailey, and that is the property I lived on.—Paul Ware. (R. 1325–1326.)

Tule fire.—Mr. LILJEQVIST. Q. Did you ever see your father's statement that he made before Mr. Burns and sent to the State of Oregon?

A. His statement?

Q. Yes. A. No, I don't think so.

Q. Are you sure there wasn't any open channel all the way from the Narrows to the open part of the lake when you first went there?

A. I wouldn't say as to that. It was all dry when I first went there. How I happened to know how it was all dry, my father set the tules afire, and the fire got away from him and burned the whole swamp, and burned it off.

That was in 1889.—Wm. Henry McKenzie. (R. 2153.)

Tule (peat land) fire.—In 1924 there was a big fire among the tules that burned over a considerable area of ground. It was west and north of the Sodhouse Ranch, and within the Bird Reserve.—Emanuel M. Clark. (R. 1738–1739.)

I remember the tule fire they had down there on Malheur Lake in 1924 (R. 1953); it burned clear up to what we call the Narrows; I do not know exactly whose place it was, it was down there in the middle of the swamp, that is, within the boundaries of the (Lake Malheur) Bird Reserve. I believe I was employed by Mr. Benson, the Game Warden, to fight the fire; there were 25 or 30 other men also employed to fight it. We used wet sacks to fight it, getting the water out of wells, around the edges of the ranches. There was no water in the (Malheur) lake. (R. 1954.) It burned the tules and plants off, and then it burned six or eight inches deep into the ground in lots of places, and twelve inches in some other places. The soil that burned is known as peat. I think it burned ten or fifteen days; the ground probably burned longer than that, I do not know; I was there just a couple of days.

Cross-examination:

The vegetation that burned was about twelve inches deep, not all of it, but some of it burned twelve inches deep.—Judd A. Wise. (R. 1955.)

Turner, James A., place.—I formerly had a place right south of where Ben Ausmus has got his place down there (in Malheur Lake), as nearly as I can tell you the description of it.—James A. Turner. (R. 1720.)

The Ben Ausmus house is about a quarter of a mile south of the south boundary of lot 1, section 28, T. 25 S., R. 32½ E.—Pecore. (R. 1720.)

My house, I would say, was a quarter of a mile below where the Ben Ausmus house is located.—James A. Turner. (R. 1720.)

Cross-examination:

I do not know how big the island was that I had my house on; never measured it; it was probably a quarter of a mile wide and probably half or three-quarters of a mile long; I never saw it covered up entirely with water.

The sand reef that I am talking about is not on an island, because the water went dry between the sand reef and north of it. The sand reef was on unsurveyed land.

I was there in 1894 and 1895, just two years.

Ausmus has got the place now; don't know how long he has been holding it. I was out there this summer and he was stacking hay on it, and he had what you might call tent houses which I saw. (R. 1727–1728.)

Mr. LILJEQVIST. Q. Where is Ausmus' place?

[Mr. Pecore indicates on map.]

Mr. LILJEQVIST. Q. Is that where the Ausmus house now is?

A. No, the Ausmus house is farther north from where I had mine. Mr. Ausmus had his house about a quarter of a mile north from where I had my house.—James A. Turner. (R. 1729.)

Also referred to by witness:

	Vol.	Page		Vol.	Page
Turner, James A. (R. 1721)	I	213	Turner, James A. (R. 1722)	II	693
Turner, James A. (R. 1720)	II	661			

Turner place.—See *Ausmus Joe Ormand (Also Ben) place.* (R. 2128.)

Also referred to by witness:

	Vol.	Page
Turner, James A. (R. 1722)	II	693

Venator, Alphena, properties.—When we first settled in Harney Valley in 1872 we settled about where the cook house stands now on the Island Ranch. (R. 2316.)

Mr. Pecore. I think the house on the Island Ranch is about six miles north of this point, as I remember it [Mr. Pecore indicating to the witness on the map]. A. Yes. (R. 2319.)

I formerly had a place up around what is known as the Swan Lake Field. I located there in 1903, and I sold the place in January, 1909, but remained there until 1912. I had several houses there and I lived in there at all seasons of the year. I had a man there during all seasons of the year. (R. 2321.)

In 1898, I owned a piece of property up near the Otley place. I had the Jordan Ranch leased. I had the Jordan ranches, but I do not know just the year. I had the Jordan, the Spurlock, the J. O. Hendricks, the Armack, and clear all around the (Malheur) lake; then I skipped the Graves (place) and I crossed the channel then over on to the other (south) side; but in later years—I cannot place the year—I had the Bill Marshall place, and other places over on the channel.—Alphena Venator. (R. 2322.)

Venator, R. K., place.—(See *Cawlfield, Jeff and George, place.*)

Mr. Pecore. R. K. Venator is shown as the patentee of lots 11 and 12, of section 3, lot 2 of section 10, lots 12 and 13 of section 4, and lot 1 of section 9, T. 25 S., R. 32 E., north of the lake.

There were improvements on my father's property and they were sold to Mr. Venator before it was patented.—Jeff Cawlfield. (R. 1884.)

Vickers house.—It is located about eight inches on the map, Plaintiff's Exhibit 3, south of the Neal meander corner of sections 3 and 4, T. 26 S., R. 32 E., north of the lake.—Pecore. (R. 249.)

I did not have any deeded lands prior to 1917 on the meander line. I claimed the tract that I have on the inside of the (Neal) meander line. I have a house on it. That tract of land inside of the (Malheur) lake is fenced; I should judge there is about 400 acres to it.—Thomas J. Vickers. (R. 256.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Brandon, James M. (R. 962)	I	430	Vickers, Thomas J. (R. 249)	II	965
Brandon, James M. (R. 999)	I	434	Witzel, John H. (R. 1115)	I	385
Marshall, George (R. 1693)	I	460			

Vickers, Thomas, place.—I am not familiar with the Vickers place by that name.—Dr. Llewellyn Eugene Hibbard. (R. 1610.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Anderson, Edward (R. 1284)	I	454	Vickers, Thomas J. (R. 256)	I	613

Mr. BLACKMAR. Vickers seems to have been the original owner; then Tim Crowley. (R. 1610.)

Vickers, Thomas L., place.—I own a place down there at the present time. It is not deeded land. It is almost in the middle of what they call the (Malheur) lake. It is on the south side (of the lake).

(NOTE.—His place is just about midway between the Neal meander line and the north and south sides of the (Malheur) lake, and almost due south of the Neal meander corner of sections 3 and 4, T. 26 S., R. 32 E., north of the lake.)

It is indicated by a dot which is the sign for a house on this map, Plaintiff's Exhibit No. 3. Around the house is indicated a barbed wire fence and the name, "T. Vickers" is written on the map (Plaintiff's Exhibit No. 3), right near the house.—Pecore. (R. 2313.)

My father (Thomas J. Vickers) and I bought the rights on those ranches in or about 1917, and I have been on that place part of every year since 1917, down to the present date. (R. 2314.)—Thomas L. Vickers.

Vickers, Thomas L., and brother, place.—I and our family at one time lived down there below Ruh's (place), inside the boundary of the present (Lake Malheur) Bird Reserve, which was known as the Vickers place. The first time I was down there, I was not very old. My brother and I came into possession of the ranch in the spring of 1905 (R. 2310) and we hayed and run our cattle in there until the spring of 1910, when we sold 500 head of cattle and the improvements on the ranch to C. R. Peterson. My brother and I were not married at the time we were living there, except my brother was married in the winter of 1909 and he lived there that winter with his family.

We had two houses, a granary, a barn and weaning place for stock on that land. We had the usual out-door equipment that goes with ranches around in this part of the country.

With reference to the condition of the fences: On the south side of this place there was no fence; it narrows off more as it goes in towards the east, and this high ground; and this here (indicating on map, Plaintiff's Exhibit No. 3) we always called it the lake shore, and there was a pretty high rim next to the fence. The cattle would drift out into the lake all the time, from this shore out to the north fence (indicating); and then running west to the Hayes corner, and then south back to the lake shore would be in the neighborhood of pretty

close to 300 acres, I would judge; I never figured up on that.—Thomas L. Vickers. (R. 2311.)

Also referred to by witnesses:

	Vol.	Page		Vol.	Page
Clark, Joseph William (R. 1040)	I	435	Finley, William L. (R. 2300)	I	601
			Vickers, Thomas L. (R. 2312)	II	995

Ware's place.—Ware's place was situated on the northwest corner of the (Mud) lake, just across on the opposite corner, right north of me. (R. 1309.)

Billy Dunn now owns the place Ware and I owned.—Richard A. Smith. (R. 1310.)

I had a place down on Mud Lake; it was on deeded land. We got the place some time after 1900; he (my father) bought out a man named Ware, whom I think got the homestead.

Mr. LILJEQVIST. It is lot 2, section 32, township 26 south, range 31 east, north of the lake, the Elliott place.

The WITNESS. Part of it was the old Ware place, part of it was not.

Mr. LILJEQVIST. Q. Where was the rest of the Ware place?

SPECIAL MASTER. The question is whether the Elliott place embraces all of the Ware place, or some more.

A. The Ware place would be up here. (Indicating on map.)

Mr. LILJEQVIST. Easterly of the house. A. Yes. (R. 2226.)

I think it was about a half a mile, but the whole of the Elliott place included the whole of the Ware place.

SPECIAL MASTER. And some more.

A. Old man Ware had a place there, too. There was two Ware places, and maybe more. I don't know. There was quite a family of Wares.—Hadden Elliott on cross-examination. (R. 2227.)

Water well, county (near Windy Point).—In the early days, I had occasion from time to time to pass Windy Point; I remember a place up there which is known as the Stauffer corral. The Stauffer corral was located a little north of west of Windy Point.

I recall the old County well up there, and the Stauffer corral was west and quite a bit north of that well, but I could not say how far. That well was dug after the corral was up. (R. 1469.) There was no well there, I did not pay much attention how far it was at the time. The well was right close to Windy Point, right close to the hill. The corral was about half a mile north from the hill.

I recall about a foot and a half bank, step-off, up there at that particular location (near Windy Point). That corral was about 50 yards east of that bank. The corral was used to brand calves in.—Marion Horton. (R. 1470.)

Windy Point.—I am quite sure Windy Point derived its name because of the wind that blew there (R. 558); I am not sure of it, but everything points that way; there was enough wind down there so that it would be proper to call it "Windy Point."—George E. Whiting. (R. 558–559.)

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Benson, George M. (R. 2530)	II	636
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Howser, Thomas George (R. 215–216)	I	350
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Whiting, George E. (R. 558)	II	705
Whiting, Schuyler (R. 178)	I	479
Woldenburg, Louis (R. 755	I	413

Woldenburg, Louis, place.—See *Ruh, Herman, place.* (R. 749.)

Woodcock, J., place.—I went over to Lawen and down that way and around by the Narrows. I went across Malheur Lake that time, that fall (of 1895), crossing somewhere from Scott Haley's place and south of there to the old Woodcock place, that was known as the Dunn place at that time.

Mr. PECORE.—It is right north of Mrs. Dunn's residence; a mile out in the (Malheur) lake bed, and as far as we were ever able to find out, it was known as the J. Woodcock place.

That house is about quarter of a mile north of the meander line of lot 4, section 29, T. 26 S., R. 31 E. south of the lake.—L. W. Shepard. (R. 1291–1292.)

Wright's Point.—Wright's Point is about six miles up (from Malheur Lake) and ends right at the Island Ranch, or very close to that.—Pecore. (R. 1126.)

In the Supreme Court of the United States

OCTOBER TERM, 1930

Original, No. —

THE UNITED STATES OF AMERICA, PLAINTIFF

v.

THE STATE OF OREGON, DEFENDANT

PROOF OF MAILING PAPERS

DISTRICT OF COLUMBIA, *ss:*

The undersigned, being first duly sworn, deposes and says: On November 1, 1930, at Washington, D. C., I deposited in the United States post office in sealed envelopes, one addressed "Hon. A. W. Norblad, Governor of the State of Oregon, Salem, Oregon," and the other "Hon. I. H. Van Winkle, Attorney General of the State of Oregon," true copies of the papers entitled in this case styled "Bill of Complaint," "Notice," "Motion for leave to file Bill of Complaint."

WM. J. HUGHES.

Sworn to before me this 1st day of November, 1930.

W. MARVIN SMITH,
Notary Public.

My Commission expires July 2, 1934.

In the Supreme Court of the United States

OCTOBER TERM, 1930

Original No. —

THE UNITED STATES OF AMERICA, PLAINTIFF

v.

THE STATE OF OREGON, DEFENDANT

NOTICE

To the Honorable A. W. Norblad, Governor of the State of Oregon, and to the Honorable I. H. Van Winkle, Attorney General of that state:

You will please be advised that on Monday, November 24, 1930, the plaintiff will apply to the court for leave to file its bill of complaint, a copy of which is attached.

WILLIAM D. MITCHELL,
Attorney General.
THOMAS D. THACHER,
Solicitor General.

Dated NOVEMBER 1, 1930.

In the Supreme Court of the United States

OCTOBER TERM, 1930

Original No. —

THE UNITED STATES OF AMERICA, PLAINTIFF

v.

THE STATE OF OREGON, DEFENDANT

MOTION FOR LEAVE TO FILE BILL OF COMPLAINT

Comes now the United States, by its Attorney General and its Solicitor General, and asks leave of the court to file its bill of complaint herewith submitted.

WILLIAM D. MITCHELL,
Attorney General.
THOMAS D. THACHER,
Solicitor General.

STATEMENT IN SUPPORT OF MOTION

The purpose of this suit is to quiet title in the United States to the beds of Malheur, Harney, and Mud Lakes against the State of Oregon.

In 1859, when Oregon was admitted into the Union, these lakes and the land surrounding and adjacent thereto were owned by the United States,

including the area reserved by Executive Order in 1908 as a bird refuge and designated as the Lake Malheur Reservation.

The United States claims that these lakes are nonnavigable. The State asserts title to these lake beds on the theory that the lakes are navigable.

The question of ownership of these lands is one which should be determined.

THOMAS D. THACHER,
Solicitor General.

In the Supreme Court of the United States

OCTOBER TERM, 1930

Original, No. —

THE UNITED STATES OF AMERICA, PLAINTIFF

v.

THE STATE OF OREGON, DEFENDANT

BILL OF COMPLAINT

The United States of America, by its Attorney General and its Solicitor General, brings this suit against the State of Oregon and alleges and shows as follows:

I

That long prior to the admission of Oregon into the Union, on February 14, 1859, the United States became, and ever since has been, seized in fee of a large tract of lake-bed land, known as Malheur and Harney Lakes, including a small strip of land constituting a connecting channel between said lakes, and known as Mud Lake and the Narrows. All of the said lake-bed land is situated in the central part of what is now Harney County, Oregon.

II

That long prior to 1859 the lands adjacent to and surrounding the lake-bed land, above described, and owned by the plaintiff, as aforesaid, was part of the public domain of the United States.

III

That the lake-bed land above described, for the most part, has not been surveyed. The shores or banks thereof always have been, and now are, undefined and untraceable upon the ground, and the accurate acreage or boundaries thereof can not be set forth herein.

A map marked "Exhibit A," showing the general location of the lake-bed land involved in this suit and hereinbefore described as Malheur, Harney, and Mud Lakes, respectively, including the Narrows, is attached hereto.

IV

In 1877 the Secretary of the Interior, pursuant to laws of the United States, directed a public survey to be made of the land owned by the United States, as aforesaid, in the vicinity of Malheur Lake, and in connection therewith the surveyor ran an incomplete meander line.

That the said meander-line survey, made as aforesaid, in 1877, was carried on at different elevations and without contours, and the plaintiff is informed and verily believes and so alleges the

the fact to be that said meander-line survey is not now, and never has been, the boundary line of Malheur Lake.

V

That the Secretary of the Interior, pursuant to laws of the United States, caused a further public survey to be made in 1895, of certain lands within the boundaries of said meander survey made, as aforesaid, in 1877, and of certain other land in the vicinity of Harney Lake, including the small strip of land hereinbefore described as a "channel," and known as Mud Lake and the Narrows, and in connection therewith the surveyor ran an incomplete meander line.

That the said meander-line survey made, as aforesaid, in 1895, was carried on at different elevations and without contours, and the plaintiff is informed and verily believes and so alleges the fact to be that said meander-line survey is not now, and never has been, the boundary of Malheur or Harney Lakes, including the small strip of land hereinbefore described as a "channel," and known as Mud Lake and the Narrows.

VI

That by Executive Order of August 18, 1908, The President, set apart and reserved by public proclamation for the use of the Department of Agriculture all of the lands therein designated, and within the boundaries of the lake-bed lands hereinbefore